

FISCHER'S MAGAZINE



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355

APRIL, 1924

THE FELLOW WHO LIVES IN
AN ATMOSPHERE OF CAN'T
AND DOUBT EVENTUALLY
SMOTHERS IN IT.

Fischer's Magazine

*Dedicated 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. II

APRIL, 1924

No. 6

He Forgot the Service

We met the vice-president of a large importing company on the train recently. An interesting chap, because he's always full of enthusiasm about his business. This time he talked typewriters.

"I can get," he said, "a folding typewriter that goes into the overcoat pocket, weighs three and one-half pounds, and does the highest grade of work you ever saw. By placing my order in Berlin for ten thousand of these I can lay them down in Chicago for \$3.85 each. This means I can sell them as low as \$15.00, and make a good profit."

A few days after this conversation we saw our friend again. We asked him about the typewriter venture. He smiled ruefully:

"Everything was all right except the *service*," he told us, "We could get the machines at the price, but could make no deal on the repair parts. I almost had given my order when it occurred to me that repairs might be needed occasionally. When I found I couldn't service the machines after they were sold, I knew the deal was off."

Everything was all right, you see—*everything but the service*. And *service* is our greatest asset: service that we have rendered to the thousands of Fischer Equipment operators which will retain their friendship and co-operation for all time, and which is making us many new friends each day.

Diseases of the Blood Vessels

B. B. Grover, M. D., Colorado Springs

ARTERIOSCLEROSIS is a condition characterized by a degenerative process going on in the arterial walls. The



process is very slow, usually requiring years in which to develop. Its etiology is more or less obscure, which gives rise to many theories and conjectures. This being true,

permits the speaker to advance a theory of his own, which is: All cases of arteriosclerosis not caused by specific infection are primarily due to faulty alimentation. The improper slitting up of the protein molecule sets free or forms a toxic substance which enters the circulation and causes an irritation of the pressor nerve fibers, resulting in narrowing the caliber of the smaller vessels, which entails an increased heart force to overcome the resistance. After a long, continued hypertension, changes take place in the muscular walls of the larger vessels.

Arteriosclerosis is often prominent in the vessels of the brain coronary arteries and the aorta and may be present when it cannot be detected in the vessels of the extremities.

Regardless of all theories of its etiology, it is a clinical fact that hypertension precedes the arterial changes.

TREATMENT—During its development, or the hyperpietic stage, much may be accomplished by autocondensation, combined with proper dietetic and hygienic management; if treatment be instituted during the early stages of hypertension, pathological changes in the larger vessels may be prevented. After the disease is well developed and cardiovascular changes have taken place, there is no cure, but still much may be done to prevent further changes by keeping the arterial tension within the safety zone, and this is accomplished by close observation, and occasional treatment by autocondensation and the adoption of such hygienic and dietetic measures that common sense will suggest. Treat

the patient how to live to avoid further changes in his vascular system that comfort may be enjoyed and his life prolonged.

The inroads of the disease can only be estimated by the symptoms present and they are not always a safe guide; therefore, it is always advisable to begin autocondensation treatment with a small dose or low amperage. The first treatment in any case should not exceed 300 ma., for a period of 10 minutes. There is no advantage in heavy doses at any time.

While preparing this paper I read in some journal a description of technic employed by an operator who should know better. It was about as follows: A tinfoil electrode, 4x8 inches (well soaped for contact), is applied to the nape of the neck. Over this a piece of block tin is applied, attached to one terminal of d'Arsonval by a rheophore, the other terminal being attached to the condenser chair pad, a current of 1,000 to 1,500 ma. is passed for 30 minutes.

While this technic might do very well in early stages of hypertension, if applied to a case of advanced arteriosclerosis that chance taken would favor a coroner's inquest.

Of all conditions treated by autocondensation, I know of none which calls for more caution in its application than in arteriosclerosis.

Let it be remembered that small doses for a long period of time are more effectual than large doses for any period of time. In the treatment of this disease there is no benefit to be derived by pushing the dose to a point causing perspiration, and, furthermore, the excitation of dilatation of the vessels of the brain might lead to a cerebral accident.

Sufferers from this disease are often annoyed by crampy muscles of the extremities and it may be the only symptom suggesting the disease. This condition calls for local diathermy. Be it remembered that its local application often yields constitutional as well as local effects; therefore, it is advisable to place both electrodes on the same aspect of the limb, the object being to heat the superficial tissues and

relax the spasm; subsequent treatments should include the affected muscles with electrodes on opposite sides of the limb with one electrode somewhat nearer the body. If the blood pressure be taken before and after the treatment, a reduction in the systolic pressure in most cases will be observed. Let me leave this thought with you: While the high frequency current is useful in arteriosclerosis, it is a potent agent equally capable of doing harm.

—*Medical Herald.*

The Employment of Some Forms of Electricity in Cardiovascular Diseases

By: Edward C. Titus, M. D., New York

* * * The newer type of High Frequency Apparatus enables us to introduce heat even into the deepest structures, and this too in a definite dose. When Diathermy is applied in sufficient quantity to the heart and greater blood vessels in cases of hypertension, the first effect observed seems to be upon the vasomotor nerves, evidenced by relief of vascular spasm and an equalization of the circulation, with increased elimination of toxic gases and solids from the fluids of the body. This is shown by the emanations from the skin and mucous membranes and by the increase of toxic products found in the urine after each treatment. One can readily appreciate the advantages of this procedure even in cases where extensive changes have occurred in the blood vessels.

* * * Dr. DeKraft says "High Frequency Currents enable us to raise the blood pressure when too low, as well as to lower it when too high. We know that there exist both vasoconstrictor and vasodilator nerves. It appears certain that as the result of a variety of toxic products generated in the human body we may have either an irritation of the vasoconstrictor or of the vasodilator nerve.

"The first effect of the great rapidity of the succeeding groups of oscillations is an intense heating of the surface of

the body and of the blood. This, in turn, stimulates the great system of vasomotor nerves resulting in peripheral dilatation of the blood vessels, and, at the same time, in stimulation of the sweat glands. It would appear that the sympathetic nervous system is stimulated in a most profound manner."

The effect of High Frequency Currents on the sympathetic nervous system is well illustrated by observations made by Sherbak. He employed Diathermy by means of two electrodes with a combined area of 57.5 square cm. The upper electrode was applied to the upper cervical vertebrae and the lower to the middle dorsal. From five hundred to seven hundred milliamperes were passed for five or six minutes. In a case of severe headache which accompanied right sided hemiparesis, hemianopsia with atrophic changes in the eye grounds and loss of hearing, twelve to fifteen applications relieved the headache. In another case of cerebral syphilis ten applications relieved the headache, hyperemia and the noises in the ears, and restored the patient to working capacity. It is interesting to note that the Argyll Robertson sign, which was present, disappeared after the treatment.

Equally good results were obtained in fifteen cases of functional disorders accompanied by circulatory disturbances in the head. In the majority of cases, the blood pressure, when above normal, was lowered after each treatment, and remained so after a number of applications. This author cautions against prolonged treatment in view of the marked circulatory changes produced in the cerebral circulation, which, he maintains, may cause anemia of the brain, low blood pressure and excitement. In my experience these symptoms do not occur if the Diathermy is applied directly through the brain. The value of Diathermy in arteriosclerosis of the brain is remarkable and permanent benefit has been noted.

Numerous observations enable us to assert that a normal blood pressure in an otherwise healthy person is never influenced by High Frequency Currents if employed in moderate doses. * * * * *

(*Ext. N. Y. Med. Jour.*)

Diathermy in Surgery

Bianchini extols the advantages of diathermy in certain surgical cases, the absence of hemorrhage, the brief time required for the electrocoagulation, in comparison with operative measures, and the ease with which the procedure can be repeated in inoperable cases. The drawbacks are the danger of secondary hemorrhage as the eschar drops off, and the danger of injury of bone, with sequestrum formation. A complete cure was realized in nearly all the twenty cases of tumors, angiomas, keloids or adenoids he describes, but he emphasizes that diathermy is merely an aid to surgery, and cannot take its place.

—*Policlinico, Rome. J. A. M. A., 1-19-'24.*

Surgical Diathermy in the Treatment of Malignant Disease of the Throat

W. S. Syme, M. D.

During the last two years the author has used diathermy in treating malignancy of the throat and has found that it gives great relief.

More and more, surgical diathermy is being recognized as applicable and preferable to ordinary surgical procedures in malignancies of the mouth and especially in those of the pharynx.

The writer uses a flat plate wrapped in several layers of lint wrung out of saline solution and this is placed under the patient's buttocks. The active pole is in the form of a blunt knife (or a button for small growths), which is plunged into the tissues and the current closed. The blood vessels are coagulated, hence the operation is a bloodless one but when vessels the size of the carotid or the lingual artery are concerned it is better to use a temporary ligature. Complete removal is done at the time of the first operation. If glands are present they are removed later in the usual manner.

The author presented six patients whom he had treated by diathermy and in whom great improvement and relief had been wrought.

The advantages of diathermy are that it is practically bloodless and in disease involving the oropharynx no external operation is required to expose the growth. Absence of shock and pain is also a marked advantage and there is no risk at all of cell implantation as there is in operation.

Glasgow Med. J. April, 1923

Diathermy for Malignant Disease of the Mouth, Pharynx and Throat

Norman Patterson, M. B., Ch. B.

Seventeen successful cases are reported. The author has been using diathermy in these conditions for more than eight years and the great majority of his cases were in an advanced state of disease. He has experienced no difficulty with severe hemorrhage in any case since he adopted the plan of ligating the main vessel supplying the part to be treated, when extensive treatment is to be given or when the patient has thickened arteries or high blood pressure.

If the primary growth is extensive, deeply rooted and in a locality unfavorable to its destruction, and especially if the secondary deposits in the neck are massive or fixed there is small likelihood of cure. An ulcer or an indurated area in the mouth or pharynx of a patient over middle age is more likely to be malignant than otherwise. Septic ulcer, cyst or gumma is often given as the diagnosis when the real trouble is epithelioma. It should be remembered that buccal or pharyngeal cancer will often give a positive Wassermann. If the glands cannot be dealt with it is of little use to apply diathermy to the primary growth except for palliation. If the area treated approaches or invades the fascial planes of the neck then there should be an interval of two or three

(Cont'd on page 10)

The New "Kolischer" Spark Gap A Generous Offer

Physicians using the new "Kolischer" gap have been so delighted with its extreme adjustability, absence of trouble or necessity of cleaning, as well as its ability to withstand indefinite severe usage, that it has entirely superseded the old types.

In spite of the fact that the demand for the old types is entirely extinct, making any allowance we may make for them an entire loss to us, we, as a matter of service and of building additional Fischer Good Will, are prepared to make a generous allowance on your old gap towards the purchase of a new one.

Just return the enclosed postal card, and we will surprise you with a very generous offer. Yes, the "KOLISHER" Gap will fit your present Style "F," "F-O," Type "L" or "Military" Model without any alterations.

Reprints of Fischer Physiotherapeutic Meeting Almost Ready

After seemingly endless delays, we finally have all of the copy of the lectures and clinics given at the Logan Square Masonic Auditorium, October, 1923.

The book will be a great deal more voluminous than we had anticipated, and there is a lot of expense attached to the printing thereof. We have calls for about two hundred copies, but will not send the book to press until we know more definitely just how many are desired, as the cost of each copy will decrease slightly as the quantity is increased. The price will be about \$5.00 each.

IF YOU WISH ONE OF THESE COPIES, DOCTOR, IT WILL BE NECESSARY TO SEND YOUR ORDER IN BY RETURN MAIL. You will find it well worth while and the best possible buy at the price asked. Use the enclosed postal for your convenience.

Program for Our Physiotherapeutic Meeting

Monday, May 12, 1924

We will have with us:

D. FRANK KNOTTS, M. D., of Chicago
Physiotherapeutic Case Histories.. 9:00 to 10:00 A. M.

MILES J. BREWER, M. D., Lincoln, Neb.
Medical Diathermy in General Office Practice
10:00 to 11:00

GUSTAV KOLISCHER, M. D., of Chicago
Surgical Diathermy in Malignancies
11:00 to 12:00 Noon

The afternoon from 1.30 until 4:00 P. M. will be spent at the Cook County Hospital, Harrison and Wood Streets, Chicago.

DR. D. KOBAK, Physician-in-charge of the Physiotherapy Department, will exhibit cases, therapeutic measures and the various technics employed in the work of that institution. This is a wonderful opportunity, and we are sure that many of our good friends will take advantage.

How to Get Here:

DRIVING—Follow Diversey Boulevard west to Western Avenue, then south to Wabansia Avenue; 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.

We have ample space for all of you. Remember the date and come to our Lecture and Demonstrating Rooms at

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weeks between destruction of the primary growth by diathermy and the neck operation, otherwise fatal sepsis may occur. If the surgeon is in doubt whether he can make a thorough clearance from the neck then the gland operation should precede that upon the primary growth.

Brit. M. J., July, 1923

Physiotherapy With Special Reference to Diathermy

L. R. Gannet, M. D.

Electrocoagulation should be used only by the expert surgeon. Desiccation and fulguration are excellent for the removal of warts for carbuncles and polypi, but time and scrupulous cleanliness in the after care are necessary factors in securing results.

A case of Bell's palsy is cited in which the thermolite used for thirty minutes and followed by the ultraviolet for four minutes at a distance of 36 inches for two days in succession was followed by the electrode with a very short spark gap for ten minutes on the second day, until the time was gradually increased to twenty minutes. After the third or fourth treatment the pain ceased and after twelve treatments the patient was cured and has remained so for three months to date.

Deafness and tinnitus aurium are often helped by the static brush discharge, and it is beneficial in cases of sprain and bruise. Patients should not be given too long a treatment the first time, but a treatment of less than 20 minutes' duration will be disappointing in its results. Likewise if the machine is not kept clean, light, dry, well aired and well oiled, results will not be good.

For successful treatment a high frequency outfit producing from 1,000 to 4,000 ma. is necessary, with insulated rheophores and sheet metal for making electrodes.

The effect desired and the skin tolerance of the individual patient will determine the strength of the current to use. Technic is given for application and treating the head, trunk, thigh and upper arm.

Diathermy may be made either sedative or stimulative and if improper technic is used the patient will get only a condenser discharge which will increase rather than diminish the pain. Diathermy is useful in all forms of arthritis and neuritis, bronchitis, pleurisy and pneumonia and in joints and muscles rigid from disuse. It is also an aid in treating catarrh of the gall-bladder. It is not, however, a cure-all and calls for knowledge in its use, e. g., if used in pressure of encapsulated pus the wall will break and metastatic abscess will result. Ultraviolet in rickets and anemia and as a protection against X-ray burns is recommended. For the latter purpose it is used immediately after X-ray treatment and every two or three days in between.

At the present time one of the great obstacles to progress in physiotherapy is the lack of any facilities for learning the principles and practice thereof.

—Med. Woman's Jour. 30:355-358, Dec., 1923

Arthritis Deformans

One of our readers has asked for an opinion regarding the application of Diathermy in cases of Arthritis Deformans. We are indebted to D. Frank Knotts, M. D., of Chicago, for the very concise, pleasant communication which follows:

"I make it an invariable rule to give every patient a thorough examination before starting him or her on diathermy or auto condensation treatment, paying especial attention to elimination and the condition of the heart, kidneys liver and colon.

In arthritis deformans the elimination is always poor. When you liberate an excessive amount of toxins in the body with diathermy you must take the necessary pre-

cautions to eliminate them by the free use of laxatives and the drinking of several glasses of hot water daily, starting the day with two glasses one hour before breakfast.

In this condition diathermy should be given in sedative doses, starting your machine with 100 milliamperes, increasing the current 100 milliamperes at a time until you reach the amount you wish to give, and taking five minutes to bring up your current to this point.

The first treatment should be 300 milliamperes for 20 minutes, then gradually turn off your current. Increase the amount of current slightly with each treatment until you reach 500 to 700 milliamperes, which should not be exceeded in a patient of this type, and the duration of the treatment should not exceed 30 minutes.

I have observed in two patients a tendency to extreme nervousness and collapse after they had taken several diathermy treatments. Both were past 60 years of age, and of the debilitated type with a history of long standing toxemia. They complained of a feeling of profound prostration and had to be kept in bed several days, recovery being slow (in one case, about two weeks).

Hoping that you will find something in this letter that will be helpful to Dr. D....., I am,"

Yours sincerely,

Dr. Frank Knotts.

P. S.—I wish to emphasize that during the entire course of treatment with diathermy the kidneys should be watched closely.

□ □ □

Did you read about the lady taking a bath who was nearly asphyxiated by a leaking gas heater? "But," says a newspaper account, "she was saved by the watchfulness of the elevator man."

Cancer of the Oral Cavity, Jaws and Throat

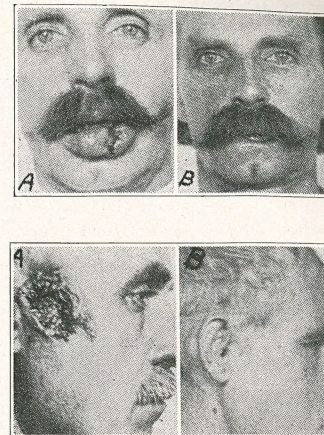
By William L. Clark, M. D., Phila.

Electrothermic methods are peculiarly adapted to the treatment of Cancer within the mouth. Malignant tissue (including bone) occurring in any part of the oral cavity, comprising the lips, buccal surface, tongue, floor of the mouth, alveolus hard palate, antrum, tonsils, pharynx, epiglottis, larynx, and proximal end of the oesophagus, may be destroyed with one electrothermic operation.

It is not necessary to split the cheek surgically to render a growth assessable to treatment, since the exposure secured by the use of a mouth gag, cheek retractors, traction on tongue by means of a suture or tongue forceps, or by the use of an endoscope is sufficient to permit the destruction of a growth. A tongue may be coagulated to the base and then excised without hemorrhage.

In addition to the desiccation or coagulation of tissues and the sealing of blood and lymph channels, the heat penetrates beyond the area totally destroyed and devitalizes malignant cells without impairing the healthy tissue, thus lessening the likelihood of local recurrence or metastasis and conserving the maximal amount of normal tissue.

Blood vessels encountered in the oral cavity are blocked by the current, and secondary hemorrhage rarely occurs. The efficiency of Electrothermic methods is increased in some cases by the judicious use of Operative Surgery, the Roentgen Ray and Radium. * * * *



Two hundred cases were treated by one or both of the Electrothermic methods or in combination with surgery, the Roentgen ray and radium. Surgery was used where the lesions were inaccessible to the current, when it required the incision of healthy tissue to expose the growth, or when it was necessary to excise the glands. In the majority of these cases the Roentgen ray, radium, or both had been used before without success, in which case these agents were not used again. When the Roentgen ray or radium had not been employed before, one or both measures were used in combination with electrothermic methods, when judgment indicated the wisdom of so doing.

—J. A. M. A., Vol. 71, No. 17.

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WE WISH to express our appreciation to our many friends for the scores of most pleasant letters received, commenting on "Fischer's Magazine." Space permitting, we would like to reprint all of them; here are a few esteemed samples:

"Your Magazine is surely a supply of 'Helpful Hints' from cover to cover, and is greatly appreciated by me."

Geo. E. Black, M. D., Akron, Ohio.

"Your Magazine is very interesting, and I enjoy reading it. In fact would miss it very much if it should cease to come."

J. D. Palm, M. D., Brockton, Mass.

"I am receiving Fischer's Magazine regularly, and appreciate it very much."

E. O. Harrold, M. D., Marion, Ind.

"Your February issue of Fischer's Magazine at hand * * * I am indeed glad to be able to turn to this publication for enlightenment."

Chas. Phillips, M. D., Wake Forest, N. C.

"Many thanks for your courtesy in sending me your Magazine, which I value."

E. F. Larkin, M. D., Bellingham, Wash.

"Keep up the good work. Fischer's Magazine certainly fills a long-felt want, and is much esteemed by the writer."

Something New in Sheet Block Tin Electrode Material

The result of combined knowledge and experience of eminent physicians and our engineering department.

This is something entirely new in sheet electrode material, composed of a body of very flexible alloy with a sheet of *pure tin* on each side. Electrotherapeutists will appreciate the fact that *pure tin* is placed in contact with the skin in preference to the lead generally supplied.

Each order of Sheet Block Tin will be shipped on a wooden roller, and packed in an individual container. This roller is to be retained, and used to remove the kinks and wrinkles from the electrode between treatments.

Although not as flexible and adaptable as the German silver mesh, it is excellent for making certain shapes and sizes of electrodes. It is readily cut with a scissors.

Cat. No. 840—.010 thick approximately
2 square feet to the pound. Lb. \$0.65

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Cat. No. 841—.018 thick, approximately 1 square foot to the pound. Lb. \$0.65

Code NESTLE

Epitome on Blood Pressure

By Burton Baker Grover, M. D.

JUST OFF THE PRESS! This book is invaluable to the physician in general practice, indicating where to look for the **cause** of high blood pressure and pulse rate variations. Price \$3.00, postpaid, including the "Key to Diagnosis."

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A PAGE OF FUN



A prominent figure in national life was walking down a street in Washington with his wife.

They passed a lady, very much younger than the wife and an ardent student of cosmetics. The stranger called to the statesman. He excused himself from his wife, stepped some distance away and had quite a long conversation with the young lady.

When he returned, his wife, very indignant, said, "John, who was that *woman*?"

He replied, "Sh! that's *exactly* what *she* wanted to know about *you*."

□ □ □

He: "Tough luck! Ten miles from town with a blowout and no jack."

She: "Didn't you bring your check book?"—*Whirlwind*.

□ □ □

Lady: "We saw the advertisement about this house being for sale and we've come to see it."

Owner: "Yes, madam; but after reading the ad writer's description of it we have decided not to sell."

—*Passing Show*.

□ □ □

"They call that girl Spearmint."

"Why; is she Wrigley?"

"No, but she's always after meals."—*Bison*.

He: "We are now coming to a tunnel. Are you not scared?"

She: "Not a bit; take the cigar out of your mouth."

□ □ □

Mother (looking through the magazine): "Darling I see from statistics given here that every third baby born in the world is a Chinese."

Father (fondling his first-born): "Then thank goodness this is our first!"

□ □ □

Short-sighted Lady (*in grocery*): "Is that the head cheese over there?"

Salesman: "No, ma'm; that's one of his assistants."

**PUT YOUR SOUL INTO YOUR
WORK AND YOU PUT YOUR
WORK INTO YOUR SOUL.**

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MAY, 1923

*Tongues in Trees,
Books in the Running
Brooks,
Sermons in Stones
And Good in Everything.*

Fischer's Magazine

*Devoted to the advancement of the Science of Electro-Physio-
Therapy and to the interests of those earnest and enlightened
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Vol. I

MAY, 1923

No. 8

Editorial Comment



Home of Fischer's Magazine

Judging from the volume of correspondence received daily, by the friendly comment, the constructive criticism and the number of helpful suggestions offered, "*Fischer's Magazine*" is proving of exceptional interest.

This is our eighth issue—what do you think of it? Have we fulfilled our desire to make each succeeding issue of more therapeutic value than its predecessor?

We want more copy—we want to pass along every good idea that is submitted—we want to circulate original articles on the latest and best Physiotherapy technique.

Your success with your Fischer Apparatus has been directly dependent upon two things:

The technique you have developed from your own actual use of the equipment, and the limited amount of general information that was available when you purchased your machine.

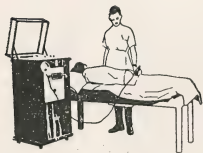
There are hundreds of doctors who are in exactly your position. Don't you think that some mighty valuable information could be exchanged if you had an opportunity of talking to each of them? Certainly, time and expense would not permit this, but, without any cost to you we are attempting, through the medium of "*Fischer's Magazine*" to provide an excellent substitute.

Let us hear from you—everyone who reads this. Do not think that because you are achieving success along a certain line with Phsiotherapy treatments that such technique is common knowledge. Many of your brother physicians might just be looking for a similar idea.

SEND ON *YOUR* CONTRIBUTION, *NOW*.

Diathermy Suggestions

Dr. Elnora C. Folkmar, Washington. D. C.



Dosage in Diathermy is a thing that can be learned only by experience. In treating small areas with local diathermy, the number of milliamperes of current should never exceed 100 to each square inch of the active electrode. In most cases the comfort of the patient is the best guide.

The duration of a treatment will depend on the condition to be treated, as well as the patient. Treatments vary in duration from 5 minutes to 1 hour.

Frequency of treatment also depends on the condition to be treated and the ability of the patient to come for treatments. In most cases daily treatments are advisable at first, then thrice weekly, later twice, and then possibly once each week.

Diathermy is not a panacea for all diseases, yet its indications are many. It is a most excellent adjuvant to many other therapeutic measures, and in many cases it is the indicated therapeutic agent par excellence. For diathermy is heat, and heat only—and heat is necessary to life, to health, to function. Heat is necessary to repair in injury to the restorative processes when disease is present, and diathermy furnishes this needed heat where it is wanted, and when it is wanted, without taxing the heat regulating forces.

Electro-Coagulation of Tonsils

T. Howard Plank, M. D.



The reduction of hypertrophied tonsils as well as the destruction of badly diseased tonsils with high frequency currents is more and more demanding the attention of the general practitioner who first sees the vast majority of these cases. When one considers the growing antipathy toward their removal by surgical means there is increasing need of investigating other methods of treatment.

It is a bloodless operation that can be performed in one's office and requires but a few minutes. The pain occasioned by the treatment can be controlled by any good local anesthetic. The writer uses a two percent of all except Butyn which can be used as low as one-fifth of one percent and all without danger of toxic effects if cocaine is omitted from the list as it should be. The local anesthetic should be injected into the tonsil as well as the peritonsillar tissues.

All tonsils needing treatment can be taken care of with the high frequency currents. This includes everything from the simple hypertrophy, the repeatedly infected, inflamed tonsils, those badly diseased and abscessed, to the malignant tonsils, and it makes no difference whether the malignancy is of the sarcomatous or carcinomatous type providing the diseased tissues are electro-coagulated. It makes no difference whether the tonsils are acutely infected or long since chronically so. The high frequency treatment of badly infected tonsils need not be delayed until the infection can be abated by some other means as it is sometimes necessary to do before cutting operations.

Hospitalization of the patient is unnecessary as it is purely an office treatment excepting malignancies. Preoperative sterilization of the throat is wholly unnecessary as the current does that by the best method known to the world

today—excessive heat. Post-operative sterilization is best accomplished by the use of actinic rays from a water-cooled, quartz-mercury lamp. All bacteria are killed by a temperature above 160 degrees F. and one has no trouble raising the temperature of the tonsil to 212 degrees F or higher.

The treatment by electro-coagulation with high frequency currents is bloodless, hence there is no need of hemostasis or hemostatics. The only articles needed besides the machine (which for this work should have a capacity of about 1000 milliamperes) will be a pair of good flexible conducting cords with sufficient insulation to prevent leakage of the current and of sufficient length to reach the patient easily, a good foot switch for the direct control of the current by the operator, a good hard-rubber handle of convenient size and length capable of holding a pliable needle of sufficient length to reach the tonsil without effort, and a wooden tongue depressor. If the tonsil is hidden behind the anterior pillar, a blunt hook or retractor will be needed so an assistant can hold the pillar out of the line of vision and away from the current. Any non-conduction material can be used for the depression of the tongue. If it is desirable to insulate the needle, it is easily accomplished by slipping small rubber tubing over it, covering all but the distal inch which should be as sharply pointed as it is convenient to handle.

The actual treatment is as follows: anesthetize the tonsil and peritonsillar tissues; set the high frequency machine to deliver about 300 milliamperes of D'Arsonval current which is sufficient for simple hypertrophies (use about 600 milliamperes if destruction is desired); have the patient sitting where a good light can be thrown into the throat; have the foot switch at a convenient distance; have one pole of the current going to the patient's hands (an auto-condensation handle is best for this). Now with your needle-holder and tongue depressor you are ready for action. If mere reduction in size is wanted, lay the needle on the tonsil and step on the foot-switch, watching carefully the action on the tissues, and as soon as the tissues commence to blanch stop and move

the needle to a new area and proceed as above until all areas are equally treated, at which time the patient is ready to go about his regular duties.

However, if you wish to destroy the tonsil, use the stronger current and insert the needle into the tonsil tissue about one-fourth inch, then proceed as before, again watching for the blanched appearance which will take a slightly longer time (a few seconds only), and will mean that the tissue around the point of the needle has been coagulated and destroyed. Now reinsert the needle into a new area and continue until the desired destruction has been accomplished and again your patient can go about his daily occupation.

The destroyed tissue will come away in about ten days, of its own accord. Do not attempt forcible removal or you will start bleeding. One treatment is usually sufficient; however, if not, another can be given a month later. The actual working time for both tonsils should not be over five minutes.

1612 Heyworth Building

□ □ □

From 12 to 14 years have been added to the average human life in the last half century, due to the progress of medical science. But 600,000 persons still die in the United States annually from preventable diseases.

□ □ □

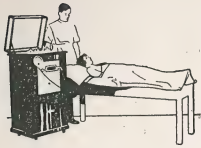
When the question of supplies and accessories comes up—just write FISCHER. Put your dependence where you know you may.

□ □ □

The denial of the employment of physical measures to those who suffer is sustenance to the quack. The adoption of these measures by the medical profession will do more than anything else toward driving the isms out of the practice of medicine.

Diathermy in Pneumonia—a Report of Ten Cases

By Harry Eaton Stewart, M. D., New Haven, Conn.
Consultant in Physiotherapy, U. S. Public Health Service



These cases are from my consulting service in the U. S. Marine Hospital, No. 21, New York, reported by permission of Col. George B. Young, Medical Officer in Charge. There have been reported heretofore a number of cases of pneumonia, treated by diathermy. In most, if not all, of these cases there was lacking the laboratory reports, clinical records, etc., which largely obviated these reports being accepted at their face value. You do not need to be reminded of the extreme caution that must be exercised in accepting any treatment as specific in this disease, which varies so greatly in type and mortality in different seasonal epidemics.

Diathermy is a form of converse heat, generated deep in the tissues between the poles of the D'Arsonval type of high frequency current. The machine used was of the portable type, capable of delivering up to 2500 milliamperes of current.

The current was turned on slowly, the rheostat slowly advanced until a maximum of 2000 milliamperes was reached in about four minutes. This was continued for twenty minutes and slowly cut down in about two minutes.

There are at least eleven different and distinct techniques in the use of diathermy. The technique used in all of these cases is the through and through bipolar method, with flexible composition metal plates, about 4x7 inches, placed directly over the affected lobes anteriorly and posteriorly. A hot shaving soap lather was applied to the skin and electrodes. The patient lay on the posterior electrode, supported by a pillow, the anterior one was held gently, but

firmly, on the chest wall. The enthusiastic cooperation of the hospital staff aided greatly in carrying out this study. The physical findings in each case were made by the Ward Surgeons, Dr. Trimmer and Dr. Boland, and the Chief of the Medical Service, Major Bryan. The X-rays were taken in the hospital laboratory. The laboratory findings were made by the chief of that service, Dr. Taylor, and the only function of the Department of Physiotherapy was to give the treatments. The head aide, Miss Cargill, gave all the treatments personally. The cases selected were nearly all those, which in the opinion of the Medical Chief, were in an extremely critical condition. Complete physical and laboratory findings in each case I have here if any of you are interested in looking them over. A complete reading of them would extend the time far beyond that allowed for the paper. I will, however, read a brief summary of each case.

Case I. G. L., 39, white, merchant seaman. Family history: one brother died of tuberculosis. Past history: negative.

The patient was admitted to the hospital January 7, 1922, and had a chill that evening.

Physical findings showed congestion of entire left lung, a few scattered râles on the right, otherwise negative. Sputum showed streptococci, no pneumonocci.

X-ray examination: showed the entire left chest dense and heart displaced to the right, suggestive of fluid. Tapped twice, no fluid obtained.

Diagnosis: *Lobar pneumonia*. On the 5th day of the disease, patient's condition very bad, the relatives were notified.

Diathermy was started in hope that it might help him. Temperature started down by lysis immediately after treatment. Treatment was continued twice a day for six days and then once a day. The most striking thing about this case was the immediate relief of pain and distress, and the improvement in the circulation. He apparently began to improve steadily from the first treatment and has made an uninterrupted recovery.

(Continued on page 10)

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By

G. M. SAMPSON, M. D.

Every operator of Physiotherapy Apparatus will surely want a copy of this splendid work.

It will be concise, complete and profusely illustrated.

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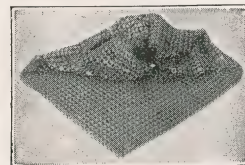
Flexible Mesh Diathermy Electrodes

(Patent applied for)

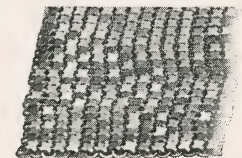
The most flexible *all-metal* electrode ever designed. Fits any part of the body like a glove. May be employed in connection with Diathermy, Electro-coagulation, D'Arsonval Auto-condensation, Sinusoidal, Galvanic or any electrical modality where perfect contact on the skin is necessary. Composed of a series of flat links of German silver. Especially recommended for use in Diathermy treatments. Use it on

The Knee and Elbow, over the Shoulder, On the Back, the Wrist and Hand, Wherever it is difficult to form a Perfect Electrical Contact with any Other Means.

Endorsed by the best known Physiotherapists everywhere. Try a piece on a difficult case and you will use it to the exclusion of all other methods. A heavy soap lather is employed as a conducting medium between the metal and the epidermis.



A Mesh Electrode



Section of Electrode showing exact size of links.

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Cat. No. 844— 6 inches wide SAFROL	\$0.30
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(Advertisement)

Case II. C. M., 24, white, merchant seaman. History: entered hospital January 24th. Complained of headache, sore throat, and pain in extremities. Pain in right chest. Temperature 103°. Pulse 112°. Respiration 24.

Physical examination: tonsils slightly enlarged and red-dened. Heart normal. Lungs, to-and-fro friction rub at left base posteriorly. A few fine crepitant râles at angle of left scapula, otherwise negative. Sharp variations of temperature for two days, simulated malaria. Two blood smears negative. Wasserman *four plus*. Urine negative.

January 27th, area over chest below right scapula over which the percussion note was dull. Broncho-vesicular breathing, with numerous fine crepitant râles. Diagnosis: Broncho pneumonia.

X-ray examination: *January 28th*. Increased density, lower lobe of right lung.

Diathermy began on the 28th and continued daily. Temperature dropped permanently on the 29th and he made an uninterrupted recovery. X-ray, *January 31st*, three days after the first one showed marked clearing in the involved area of the right lung. Marked relief varying from two to four hours followed each application of diathermy, noted by the nurse and the ward surgeon.

Case III. A. H., 37, white, merchant seaman. Family history: negative. Present illness: admitted hospital *January 19th*. Two days before entering had a severe chill, pain in extremities and back and headache. Extreme prostration and cough. On entering the hospital temperature was 101°, which rose to 104° within seven hours.

Physical examination: heart normal. Coarse bubbling râles over both bronchi, a dullness over base of the left lung. Breath sounds harsh through entire left lung. *January 21st*, patient's condition much worse, pulse 136, and thready, respiration 44 and labored. Chest showed well developed lobar pneumonia at right base and pleurisy with effusions at the left base, W. B. C. 46,000, 82% polys. *Diathermy* applied three times, twice during day and once at night on

the 21st. Patient showed temporary improvement that was marked. On the 22nd, the patient developed hemorrhagic rash on the back and upper extremities. General condition, critical. Patient died on the 22nd, 8 P. M. Blood culture 18 hrs. incubation showed streptococcus veridans septicemia.

Autopsy: lobar pneumonia on the right, central pneumonia on the left, pleurisy with effusions on the left, septicemia. In the pleura an exudate about 1-8th inch thick, which covered the pleura.

Case IV. W. S., 19, white, merchant seaman.

History: had a chill day before entering hospital. Admitted *January 19th*. Temperature 104°, pulse 105, respiration 36. Acutely ill.

Physical signs: percussion note dull over area below left scapula. Fremitus increased. Distinct broncho vesicular breathing with a few fine crepitant râles. *January 20th*. Examination showed clear-cut lobar pneumonia. Left lower lobe. Sputum examination. Pneumococci type 4. Wasserman negative. White cell count 28,600, 78% polys.

Diathermy began on the 22nd and repeated twice daily. Patient was delirious from the 21st to the 23rd. Temperature fell by lysis, recovery was uninterrupted.

Case V. E. R., 26, white, merchant seaman.

History: admitted *February 3, 1922*. Taken with frontal headache, weakness, severe pain in left chest the previous day. Pain on inspiration or coughing.

Examination: Throat negative, chest, left base posteriorly a loud friction rub. Harsh breathing over both bases. Given mustard plaster, aspirin gr. 10 q.4 h. and amon. carb. and cod. p.r.n.

The next day left base gave bronchial breathing whispered pectoriloquy and dullness almost flat.

Diagnosis: *Lobar pneumonia*. Type IV pneumococcus.

Diathermy started twice daily which lessened pain. On the 7th the right middle lobe became involved and real double

pneumonia developed. On this day condition reported desperate, patient "filling up." Greatly improved by two diathermy treatments three hours apart and temperature began to come down by lysis reaching, normal on the 10th.

Case VI. G. S., 32, white male, merchant seaman.

History: had chill and became ill two days ago. Admitted February 13th, 1922.

Examination: chest showed patch of consolidation below right scapula. Bronchial breathing.

Diagnosis: *Lobar Pneumonia*. Type IV (February 15th.)
Diathermy twice daily with improved symptoms and fall of temperature by lysis.

Lab. *Urine* negative for albumen or sugar.

X-ray of chest showed mottling and fibrosis of right lung suspicious of T. B.

Sputum negative for T. B. Pneumoccus Type IV.

Blood w.b.c. 21,200, 82% polys.

Temperature reached nearly to normal February 18th.

Diathermy discontinued.

March 3rd. Left lung became involved. Many râles in right base still.

Diathermy twice daily. Irrational two days with high fever which returned to normal on the 8th and 9th, followed by rapid recovery.

Case VII. J. R., 37, white male, merchant seaman.

History: very ill for several days. Admitted Feb. 16th, 1922.

Examination: right base flat, bronchial breathing. Patient cyanotic, pulse 120. Temperature 103.4. Prune juice sputum.

Diagnosis: Feb. 17. *Lobar pneumonia*: Sputum Type IV pneumococcus.

Diathermy twice daily begun at once.

Temperature started down immediately by lysis, with general improvement.

Urine Sp. Gr. 1027 Alb. trace pus present.

X-ray upper right lobe dense.

Sputum negative for T. B.

Made a slow uninterrupted recovery.

Case VIII. O. Y., 28, mongolian male, foreign seaman.

History: felt ill three days before admission on Feb. 22, 1922.

Examination: chest shows râles and harshness throughout. Cardiac mitral murmur. Left base harshness and bronchial breathing.

Diagnosis: *Lobar pneumonia*. Type undetermined. *Diathermy* twice daily. Lab. reports: blood hemoglobin 100%, white blood cor. 10,000. Wasserman, Neg.

Temperature started down by lysis after the first diathermy treatment. Recovery rapid.

Case IX. A. H. B., 31, white male, merchant seaman.

History: acutely ill four days before admission Feb. 23, 1922.

Examination: scattered râles and harsh respiration throughout chest. Pulse 96, Resp. 36, temperature 105. Dyspnoeic and cyanotic. Suspected influenza. Feb. 25 developed dullness in right base with bronchial breathing. Cyanosis more marked. Resp. 40 and shallow. Pulse 112.

Diagnosis: *Lobar pneumonia*. *Diathermy* twice daily. Lab. no virulent pneumococci. Blood hemoglobin 75%, w. b. c. 10,000.

Feb. 26: heart enlarged to left. Mitral systolic murmur. Patient irrational. Temperature came down by lysis after the first diathermy treatment. Recovery rapid and uneventful.

Case X. W. McD., 52 white, male, merchant seaman.

History: slightly ill for two days. Admitted March 4.

Examination: right chest anteriorly shows dullness, prolonged respiratory note. Friction rub posteriorly with a few râles.

March 6th: dullness increased at right base, vocal fremitus bronchial breathing.

Diagnosis: *Lobar pneumonia*. *Diathermy* started twice daily to March 13th with steady improvement in all symptoms and temperature drop by lysis. Lab: *Urine* Sp. gr. 1023. Sugar negative. Albumen trace. *Sputum*, unsatisfactory for typing.

March 15: much improved, diathermy once daily. Recovery rapid and uneventful.

Conclusions: The results in these cases are suggestive that diathermy may have an influence in hastening recovery in pneumonia. The evidence is not at all conclusive. In several of the cases the diathermy was not instituted until in favorable cases the temperature might be expected to start downward, but it is the opinion of the medical staff who selected these as test cases that diathermy helped in their recovery. When we have had many more cases to report on, we hope to be able to make a more definite statement, but this much we do know, that in *every single case* and in almost every single *treatment* the temporary effect upon the patients was remarkable. Cyanosis disappeared. The expiratory grunt when present was markedly lessened or stopped entirely. Respirations were less labored and the patient received from two to four hours of very marked relief, in many cases obtaining sound sleep. Now diathermy has been ordered as soon as the diagnosis is made in every case of pneumonia at the Marine Hospital.

It is not too much to assume that in many critical cases this marked relief of symptoms may be the turning point in disease. Under proper technique there is no danger of ill effects from two or even three diathermy treatments per day. The proper technique is of the greatest importance. The fall of temperature takes place by lysis where diathermy is used.

Pneumonia attacks all ages and the rugged as well as the weak. The death rate is so high that any method of treatment which will lessen it to any extent would be invaluable. The results of this work are sufficiently encouraging to justify the wider employment of diathermy in this disease.

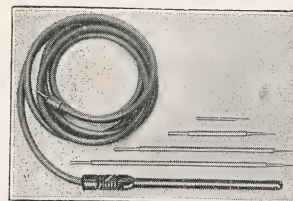
420 TEMPLE STREET.

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He who slurs physiotherapy strikes a blow at the house in which he lives.

A New Surgical Diathermy Electrode

Suggested by Dr. T. Howard Plank for electro-coagulation operations—especially tonsillectomies. It is small, very light in weight and exceptionally handy for this work. The operator's hands are out of the line of his vision, entirely, when making the application.



A very flexible rubber covered cable is securely fastened directly into the polished hard rubber handle, and is sufficiently insulated that it may be wound around the hand and arm, or allowed to lay against the face of the patient with absolutely no danger of shocking.

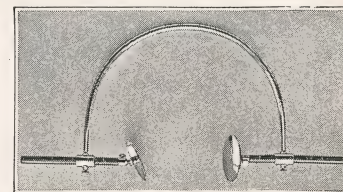
There is no exposed metal anywhere with the exception of the active tip. Four tips of different lengths are furnished as illustrated.

Catalog No. 862—Code SALLY—Price.....\$5.00

Fischer Improved Diathermy Clamp

An aluminum casting, smoothly polished and light in weight, arranged to support two disc electrodes—one on each side.

The electrodes proper are supported on hard rubber handles which are adjustable to fit any size part to be treated. The discs are mounted on swivel ball joints, making the entire assembly a very convenient and useful device.



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A PAGE OF FUN



Puzzle—Find the Frog

Absent-minded Professor: "I will now show you the internal structure of a frog—"

Same party, after opening a package disclosing a hamburger sandwich: "M-m-m I was sure I ate my lunch a few moments ago".

—Literary Digest.

□ □ □

She knows Him

Jack: "I think I have a cold or something in my head."

Genevieve: "Must be a cold".

□ □ □

The Inspired Composer

There is one honest brokerage house. It advertises: "Let us place your name on our waiting list."

□ □ □ □

Sarcasm

Doctor: "You have been at death's door, and only your strong constitution has saved you."

Patient: "Remember that when you send in your bill."

De Mortuis

"Took a walk through the cemetery today, and read the inscriptions on the tombstones."

"Well, what about it?"

"Was wondering where all the wicked people are buried."

□ □ □

More Apropos

The notice in the rooms of hotels which reads, "Have you left anything?" should be changed to "Have you anything left?"

—Detroit Motorist.

*And so let us be Cheerful,
Without Regret for the
Past,
With Contentment in the
Present,
And with Strong Hope for
the Future.*

FISCHER'S MAGAZINE



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345

JUNE, 1923

What is a failure? It's only a spur
To a man who receives it right;
And it makes the spirit within him stir
To go in once more and fight.
If you never have failed, it's an even guess
You never have won a high success.

—Edmund Vance Cooke

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. I

JUNE, 1923

No. 9

Progress

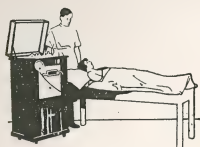
IT IS surprising what one can find when digging into past history. There are those even today who shun Electrotherapy as being "too new" and "untried," yet the editor has just come across an old set of patent papers, dated August 9th, 1859—64 years ago—taken out for Moses Marshall, of Lowell, Mass., calling for "An improved device for making Electro-Magnetic Currents" . . . "A new and useful machine for *curing* or ameliorating diseased persons, particularly those affected with nervous complaints."

What wonderful, progressive strides have been made in those 64 long years! Especially in Medical Electricity! Results that were undreamed of even 10 years ago are daily occurrences in the practice of Electro-physiotherapy today.

And, while on the subject of progress, are we sufficiently thankful—that we are permitted to live in this marvelous age; to see the constant development of worldly resources; in the midst of greater opportunities for doing good—than any generation heretofore? To see men fly through the air as birds, and go under the waters as fish; to take heat and power from the ground; and take electricity, the most potent factor of all, with incalculable power, from the air, and to be able to convert this wonderful element to the physical up-building of humanity?

Diathermy in Pneumonia

The Technic of Application



Excellent results have been achieved, and much written recently on the treatment of Pneumonia by Diathermy. The following is a clear and concise technic which has been approved by well known physiotherapists:

Two German silver mesh electrodes, each connected to one of the diathermy outlets on your machine, are applied posteriorly and anteriorly over the affected lobe. Electrodes should be 5" by 6" in size. If both lobes are involved, either use larger electrodes or apply the anterior mesh on the left side and the posterior on the right.

Use sufficient warm soap lather on the skin and under the mesh to insure perfect contact.

Start the treatment with not over 200 Milliamperes; after a minute increase slowly, allowing 5 minutes to reach the maximum of from 1800 to 2000 M.A. After 20 minutes of this maximum current gradually cut the M.A. down again to zero before cutting off, consuming about 3 minutes in the reduction.

It is advisable to treat twice or even three times daily.

Spread a padding under the back or use a thin soft pillow on which the mesh electrode is placed. The patient lies on this electrode, and perfect contact is obtained. The assistant should hold the anterior electrode in place, with only sufficient pressure to insure contact, being careful not to restrict the movements of respiration. Handle the patient gently.

The only contra-indication to the use of medical diathermy is the presence of pus without drainage.

□ □ □

From the mistakes of others a wise man corrects his own.

High Frequency Currents and Roentgenotherapy in Vesical Tumors

GUSTAV KOLISCHER, M.D. and HARRY KATZ, M.D., Chicago

The introduction by Beer of the high frequency spark in the treatment of vesical tumors was an impetus to the study of satisfactory methods for controlling such growths. Endovesical and transvesical application of the high frequency current was taken up with great enthusiasm by urologists, so that at present these forms of treatment are considered by a majority as the method of choice in tumors of the urinary bladder. Clinical experience, together with the teachings of modern biology and pathology, have helped to clear the field. In the application of high frequency currents one must distinguish between fulguration, the destruction of structures by the electric spark, and surgical diathermy, the killing of tissues without sparking by the heat produced through the resistance offered by the tissues to the current forced through them.

Fulguration may be applied by the endovesical route, the cystoscope with the attached carrying tube and active electrode being introduced through the urethra, while the inert electrode is placed on the back of the patient. The destruction of the tumor is accomplished without opening the viscus, the current used being of low voltage and amperage. This procedure is the method of choice in all presumably benign tumors whose location and size permit approach by the fulguration wire. Whether the spark is directed to the base or the crown of the growth will depend on the character of the papilloma. The quickest method of removing such an excrescence is to place the wire tip directly in the base of the

tumor. Thus the nourishing blood vessels are rapidly obliterated. In consequence, the growth shrivels immediately and the whole operation is finished in one step. This sort of fulguration is advantageously applicable only to the leaf shaped papillomas that have a constricted pedicle and are so transparent that the blood vessels running through them are easily seen.

However, in papillomas that carry a dendritic, bushy crown, the direct approach to the base may not only be difficult but also disadvantageous for other reasons. Even if one succeeds in placing the end of the wire into the base, the crown of the tumor is likely to drop over it, making it impossible to watch the effect of the spark. Then the pushing around of the crown may lead to the separation of intact particles, thus leading to multiple implantation of such fragments, whose inclination toward proliferation may eventually lead to a papillomatosis of the entire bladder. In all such instances it is advisable to start the coagulation from the top of the growth, bringing the active electrode successively in contact with various sectors of the crown.

Even if particles of the tumor are dispersed throughout the cavity of the bladder, these fragments are readily devitalized by the spark and unable to form an implant. As a rule, in such cases it will be necessary to make several applications at various sittings; but this disadvantage is outweighed by the safety of the procedure.

Endovesical fulguration must not be attempted if circulatory changes are observed around the base of the papilloma, though in all other particulars this growth may show the clinical signs of benignancy. These changes may be edema,

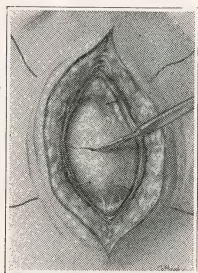


Fig. 1.—Bladder exposed; transverse incision placed between the two suspension sutures.

submucous blood patches, engorged and numerous blood vessels, or simply thickening and rigidity of the adjacent mucosa, which in such a case, as a rule, has lost its normal gloss. Then the application of the spark may involve pronounced danger. It must be remembered that the fulguration spark not only burns but also produces a mechanical effect, divulsing and comminuting the tissue it is brought to bear upon.

These circulatory disturbances may be due to inflammation subsequent to infection, or to malignant degeneration in and around the base of the tumor. In either case fulguration may be followed by untoward results. Infectious matter may be forced into the surrounding tissues, and severe pericystitis and even peritonitis may develop; in the case of malignancy, forced dissemination of malignant cells may result, which quite often leads to an explosive luxuriation, so that in a short time the whole pelvis becomes filled with cancerous masses.

In all cases of the character mentioned and in all decidedly malignant instances, surgical diathermy, after the bladder has been opened, should be employed; that is, currents of higher tension and voltage are used. The details of administering the high frequency current will again be regulated by the features peculiar to the tumor under consideration. The leading requirements are simplification of the entire procedure, avoidance of implantation of tumor particles likely to luxuriate in the adjacent areas, and the delivery of a finished surgical product, thus making possible an early resumption of the natural functions and shortening the time of recovery, and at the same time satisfying the principal postulate, the avoidance of a relapse of malignancy.

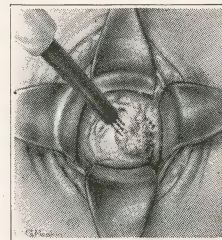


Fig. 2.—Carbonization of arboraceous crown of tumor with multispikey electrode.

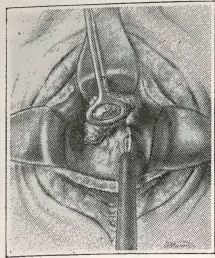


Fig. 3.—Elevation of tumor crown; severing of the pedicle by the galvanocautery.

of the bladder is exposed, and the reduplication of the peritoneum is stripped off by gauze dissection, exposing freely the outer anterior bladder wall. Then in the upper and lower angle of the wound two tension sutures are inserted which penetrate the bladder wall. The ends of the suture are secured by metal clamps, the weight of which helps to elevate the bladder, which in later stages makes the vesical cavity better accessible. Now the bladder is opened between these guy ropes by a transverse incision (Fig. 1). The transverse incision, while permitting free exposure of the vesical interior, offers the advantage of facilitating the suturing of the bladder wound and at the same time prevents oozing of urine into the *cavum retzii*, in case the suture line should give. Then in the upper and lower angle of the vesical incision a fiber retractor is inserted. As a rule, pulling in an occipitocaudal direction will suffice to give sufficient clearance; in the case of very large tumors, one or two lateral retractors may have to be added. If one encounters an arboraceous bushy tumor, an electrode carrying three or four spikes is chosen (Fig. 2); and, by raining a shower of heavy sparks all over the crown of the tumor, a superficial coagulation or carbonization is accomplished. This deals successfully with any hemorrhage present, prevents bleeding during the following steps, and at the same time does away with the danger of implantation, because even if tumor particles are broken off during the necessary manipulations, these crumbs are already devitalized. If the tumor is pedunculated, its seared top is seized with forceps and gently pulled upward. The exposed pedicle is now severed with a galvanocautery closely to its implantation (Fig. 3). The resulting stump and the immediately adja-

Technic

We apply in vesical tumors solely the monopolar method. The inert electrode, a square of blocked tin, 20 by 10 cm., padded with gauze soaked in physiologic sodium chlorid solution, is placed under the hips of the patient, while the coagulation is carried out by a metallic electrode introduced into the opened bladder. Into the rectum a Barnes bag is inserted, and this is distended by 200 c.c. of water, raising the trigon and facilitating the clearance of the vesical base. The bladder is distended with 200 c.c. of a 2 per cent protargol solution. By the usual median abdominal incision, the anterior aspect

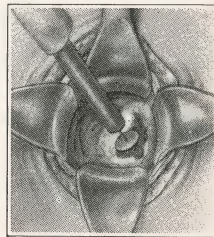


Fig. 4.—Coagulation of tumor base and concomitant sealing of adjacent lymphatics with the stamp-shaped electrode.

cent area are now coagulated with a stamp-shaped electrode to the desired depth (Fig. 4). If the tumor is dendritic, but rather sessile without a well defined pedicle, then the initial act of sparking is executed by means of a single spiked electrode. The sparks of this cover a lesser area than the multispikey one, but produce deeper penetration, so that the whole tumor mass is quickly reduced to a hard crust (incineration). This procedure is more in the nature of the original siederation. Then, the stamp-shaped electrode is applied again for the coagulation of the base, care being taken to include the whole visible and palpable area of malignant infiltration in the coagulation. The siederation and coagulation are carried on until a thoroughly dry scab results and no punctate oozing is to be seen. The scab is as a rule white, unless the tumor is very rich in blood, when it is black. Under no condition is the spike pushed into the tumor mass, for reasons explained above. Sessile infiltrating tumors are coagulated immediately with the stamp electrode without any previous sparking.

COMMENT

The extent of the coagulation and to what depth it ought to be carried out deserve some discussion. At first it was deemed necessary to coagulate the entire tumor mass in dealing with malignant growths. But experience covering immediate and remote results in bladder tumors and uterine cancers led to restrictions which, if applied, apparently improve the results in a striking way. If, for instance, a tumor, whether an indigenous vesical growth or a prostatic cancer that perforated into the bladder, involves the vesicorectal septum, a complete coagulation of this mass will produce a cloaca after the sloughing is finished. In addition to the distress caused to the patient, such a condition will almost invariably lead to general sepsis or to death by the development of a septic pyonephrosis. Therefore, in cases of this type the coagulation should penetrate the tumor only to a limited depth, while the remainder of it is left to the influence of roentgenotherapy.

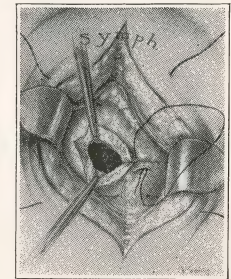


Fig. 5.—Vesical incision closed by a mattress suture.

(Continued on page 10)

Elastic Bandage

We are always open to conviction—and when we were told that the Cotton Elastic (non-rubber) Bandage we advocated was not as good for Diathermy purposes as the more elastic material with the rubber, we investigated thoroughly.

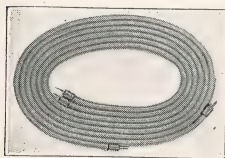
As a result we must admit that the Rubber Elastic Bandage is much superior. It binds the electrodes more firmly in place with less tension and consequently less interference with the blood stream. We are prepared to supply any amount of the 3-inch width.

Catalog No. 854—Code ELBAND—per yard, \$.35

□ □ □

New Diathermy Cords

Diathermy Cords are constantly getting wet, and when covered with a mercerized or silk webbing they are usually a pretty sorry sight after using but a few days.



Here are some much improved Diathermy Cords covered only with pure gum rubber. They are very flexible, easily kept as clean as new, and constructed to last indefinitely.

Cat. No. 1130—Code NEGRO—
per 6 ft. pair.....\$2.50

Bifurcated Diathermy Cords

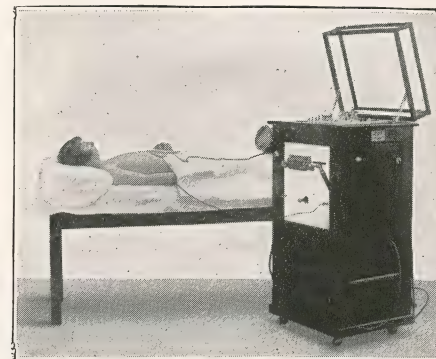
Made up in the same style and material as our No. 1330 cords, but with a 4 foot single length branching into two cords each 2 feet long.

Cat. No. 1332—Code SALIFY—each.....\$2.00

□ □ □

Leaders in any endeavor are just ordinary persons with extraordinary determination.

Physiotherapy with Fischer Apparatus



Style "FO"

High Power Diathermy and Auto Condensation Outfit

The finest and most powerful outfit of its type that can be made. Compact, simple in operation, capable of the finest kind of results—and is securing such results daily in the offices of hundreds of busy physicians and surgeons.

Peculiarly desirable because of its extreme usefulness in such a wide variety of conditions, for which it affords a modern, ethical, efficient and time-saving method of treatment. Furnishes practically every modality used in electro-therapeutic work.

Cat. No. 1220.....\$575.00



Advertisement

In case the latter should be successful, then the part of the tumor that replaced to a certain extent the septum will in course of time be replaced by fibrous tissue, thus avoiding the formation of a cloaca. This procedure, originally instituted as the choice of the lesser evil, became under the weight of further experience the routine method. It was observed that roentgenotherapy following partial electrocoagulation yielded curative results that, in our experience, surpassed those previously accomplished by the employment of one of these methods alone. After the necessary electrocoagulation is completed, the bladder is mopped clean, care being taken to do all the sponging by dabbing and not by wiping, thus avoiding traumatism to the vulnerable vesical mucosa. Then the incision in the bladder is closed by catgut sutures inserted in such a way as to guarantee a broad apposition and avoidance of impaction of the mucosa into the suture line (Fig. 5). Over this suture a simple running suture is whipped to insure water tightness. Then the tension sutures supporting the abdominal wall are placed. Underneath these sutures a fine drainage tube, preferably a silver one, is placed, parallel to the incision and protruding at each end of it (Fig. 6). In this way perfect drainage is insured, and even in case of infection, sloughing of the fascia is prevented. Then fascia and cutis are closed in the usual way, and the guy ropes are tied.

The patient either begins to urinate naturally shortly after the operation, or, if unable to do so, is catheterized at regular intervals until the natural function is resumed. As a rule, the whole wound heals by first intention, and even if a slight breaking down should occur, the repair sets in quickly.

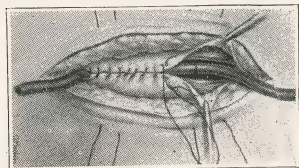


Fig. 6.—Drainage tube inserted underneath tension and suspension sutures; the fascia is closed over it.

The sloughing away of the diathermic scab takes from ten to sixteen days, according to the ex-

tent of the electrocoagulation obtained. On account of the varying intensity of the desiccation in the various sectors of the area subjected to diathermy, and the timely difference in the subsequently developing demarcating inflammation, the sloughing proceeds in the various areas with varying velocity. Therefore there are never large chunks of scabs thrown off at once, and the loosened shreds are further softened by the urine, and the sloughed particles are voided with the urinary stream. Beginning at the end of the first week after the operation as a matter of extreme precaution the bladder is regularly flushed with an antiseptic solution.

THEORETICAL CONSIDERATION

In explanation, the following theory may be offered: It is shown that, subsequent to electrocoagulation around the necrosed area, there is created a zone of reaction, or aseptic inflammation; there is not only an invasion of highly active cells, as round cells and lymphocytes, but the fibrous tissue becomes abundantly vascularized and fibroblasts appear. It may be safely assumed that intact cancer cells existing within this zone also fall under this influence. All roentgenologists agree that the more hyperemic a structure is and the more it returns to the juvenile stage, the better is the prognosis for the curative effect of the therapeutic rays. It may be suggested that under the action of the rays these energized cells produce materials which, in turn, act systemically to reduce the excessive multiplication of malignant cells. It therefore became our routine to coagulate malignant tumors to a restricted depth only, and to leave the remainder to roentgenotherapy.

CLINICAL EXPERIENCE

Out of twenty-seven cases of malignancy treated in the manner described two patients died: A woman died three days after the operation, with the symptoms of protein poisoning, evidently due to insufficient sealing of the lym-

phatics, permitting rapid absorption of débris; a man succumbed to a gas-producing bacillus infection in the abdominal wound, which became evident on the fourth day after the operation.

All the other patients, the oldest one being operated on more than three years ago, do not show any relapse or malignancy at the present date.

The exposure, opening and closing of the bladder, may be done under local anesthesia; for the coagulation, general anesthesia is preferable; the short duration of this manipulation reduces materially the danger of general anesthesia.

SUMMARY

It should be mentioned that any extensive electrocoagulation is, as a rule, followed by the development of a more or less intensive edema of the vesical mucosa. If of a high degree, it may be and actually has been mistaken by the inexperienced for a relapse. Careful and repeated cystoscopic examinations will clear the issue. Roentgenotherapy in massive doses is administered forty-eight hours after the operation, thus taking advantage of the perithermic reaction. Preoperative irradiation interferes with the reconstructive potencies of the tissues and prevents primary reunion. We have not seen any favorable results from the employment of radium needles, but frequently infection following their use has been observed.

The whole procedure is simple, practically bloodless, and of short duration. The primary mortality is considerably lower than that following resections or total extirpations of the bladder. The destruction of the tumor does not involve any reduction of the capacity of the bladder, which is one of the objectionable features of the cutting operation. The patient is not subjected to the dangers and misery of an abdominal drainage.

108 North State Street.

—*Abs. Jour. A. M. A.*

Physiotherapy in Acute Coryza

Leo C. Donnelly, M.D., Detroit

The following technic relieves the average case of acute Coryza:

Both anterior nares are first rayed with the Kromayer Lamp using the nasal holder. Then the nostrils are blanched with a one to one thousand adrenalin solution containing two per cent cocaine. A short quartz rod and a curved nasal quartz rod are then used in turn in each nostril, sterilizing both nostrils.

The tonsils and naso pharynx in turn are rayed with the Kromayer Lamp, using a hollow tubular applicator, and while doing this local work the essentials of quartz and radiant therapy are explained. At the completion of the treatment the patient is given a general bodily Alpine treatment with a larger dose over the head and chest, to build up the general resistance.

Following the general Alpine treatment a Deep Therapy Radiant Lamp with a blue globe is used over the face and upper chest for thirty or more minutes, bringing the Lamp as close to the patient as is consistent with comfort.

The couch on which the patient lies is equipped with a large, heavy auto-condensation pad over which are placed two woolen blankets and a clean sheet. A German silver mesh electrode, eight by ten inches, is placed over the patient's chest, which is held in place with a sandbag.

This mesh electrode and the auto-condensation pad are connected to the Fischer "FO" Machine. A general diathermy treatment is now given, lasting from fifteen to thirty minutes, using from 500 to 1000 Milliampères of current, according to the patient. Your patient is now receiving a general diathermy treatment.

A glass nasal vacuum electrode (Fischer No. 4) is held in the operator's right hand; the left hand is placed on the patient's

forehead; the vacuum tube is then passed gently into the nostril, the left hand is removed from the patient's forehead, allowing the high frequency current to short through this tube and ground through the operator's body. The electrode is gradually worked deep into the nostrils, and generally it will pass back to the pharynx. This application is then repeated in the other nostril.

This technic generally aborts or cures a Coryza. If the patient is constipated, the sine current from the Morse Wave Generator insures a good bowel movement; use cam 3 for a new patient and cam 4 for an old patient. Urge drinking a great deal of water or hot lemonade during the day to insure washing out the poison which is turned loose with these treatments.

This method is entirely drugless, but if your patient wishes drugs they may be prescribed. If necessary, the treatment may be repeated, but in the majority of cases once is sufficient.

□ □ □

Dr. L. C. Donnelly, also says, in speaking of the benefits of quartz light therapy in pelvic inflammation: "In pelvic inflammation, as in most diseases, the battle rages between the resistance of the patient and the virulence of the infecting organism. In either case, Quartz Light therapy is of proven value. . . . Improvement in general symptoms may be immediately noticed.

Material benefit, however, is noted week by week rather than day by day. With sick people, evolution is better than revolution. Slow, steady progress is better than rapid recovery with relapses. Quartz Light therapy brings about the recovery by sterilizing germs, breaking down toxins, increasing elimination, normalizing white blood cell count, increasing the amount of red blood cells and haemoglobin, in fact so aiding metabolism that a condition approaching normalcy is brought about."

Our Mailing Department



We don't want to toot our horn just to make a noise, but we feel that our Magazine which comes to you so regularly does not always carry with it the sense of importance that it bears when it leaves our mailing department.

The difficulty and magnitude of the work required to edit, publish and mail 13,000 FISCHER'S MAGAZINES every 30 days is rarely appreciated by the average physician receiving but a single copy.

Are you giving FISCHER'S MAGAZINE its proper place in your library?

Are you keeping the copies for future reference, and last, but not least, are you contributing YOUR share of "copy"?

A PAGE OF FUN



Thanks, Doc.

A farmer rushed up to the home of a doctor in the village late one night, and asked him to come at once to a distant farm house. The doctor hitched up his horse and they drove furiously to the farmer's home. On arrival the farmer asked "How much is your fee, doctor?"

"Three dollars," came the surprised answer.

"Here you are," handing over the money, "That blamed liveryman wanted five dollars to drive me home."

□ □ □

Sympathy?

Tommy was in the dentist's office, and the dentist had just finished extracting a tooth.

"Doctor," said Tommy, "The tooth next to that one aches, too."

"Yes," replied the doctor, "It aches in sympathy."

"Yank it out," commanded Tommy, "Darn such sympathy."

□ □ □

Pa and the Boy

"Willie, your master's report of your work is very bad. Do you know that when Warren G. Harding was your age he was head of the school?"

"Yes, Pa, and when he was your age he was President of the United States."

Page Dr. Coué

"Fred's been glum since he was arrested for autosuggestion."

"Autosuggestion?"

"Yes, he asked a girl to go riding."

—Wisconsin Octopus.

□ □ □

Golfers—Warning!

She: "I'm just waiting for my husband to complain about my extravagance this month."

Her Neighbor: "Ready to give him an argument, eh?"

She: "You bet I am! By mistake his golf club checks came to the house, and I've got 'em."

□ □ □

Growing Fast

"How old are you, Marjorie?"

"I'm five, and mother says if I'm good and eat lots of oatmeal, I'll be six next birthday."

So, what signifies wishing
and hoping for better times?
We may make these times better
if we bestir ourselves.

—Benjamin Franklin

FISCHER'S MAGAZINE



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346

JULY, 1923

ALL THINGS COME TO
THE OTHER FELLOW
IF YOU
SIT DOWN AND WAIT.

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. I

JULY, 1923

No. 10

Confidence

ACCORDING to Webster: "Trust; state of feeling sure; belief; that in which faith is put or reliance had."

A much maligned word, truly—about on a par with "service." Yet one must have *confidence* in one's self and in the intimate surroundings of his own particular little world if he is to enjoy well founded satisfaction.

True thinkers certainly require convincement, and generally some amount of persuasion before forming definite conclusions, be the subject what it may.

There are others, and they form a lamentably large class, who prefer to ridicule and criticise instead of investigating—who underestimate and minimize every new thought or departure from the conventional paths.

But what greater *confidence* can there be shown to compare with that exhibited by the modern investigating thinker, the up-to-the-minute physician or surgeon employing Fischer Physiotherapy Apparatus? Their *confidence* is many fold: first, in themselves; second, in the manufacturer; third, in the quality of the goods; fourth, in the efficiency of the apparatus; and last, but not least, in the almost guaranteed results to be derived; all of which *confidence* is indicated in the unprecedented sales of Fischer Diathermy Outfits!

We are adding many to our list of friends every day—more physicians are dealing with, and obtaining satisfaction from, the House of Fischer, "that in which faith is put, or reliance had."

Dysmenorrhoea

CHAS. L. MULLINS, M. D.

Most cases of dysmenorrhoea that I have seen during my thirty-two years of practice, have been in young girls and in young women. Most of these have impressed me as being mechanical in their causation, angulated cervices, or defective development. Where the painful periods are due to angulation, I formerly tried all the various methods in use. Forcible dilatation under anesthesia usually afforded relief for from two to six periods, when the pain gradually returned, and upon re-examination I would find the angulation as before the dilatation.

Since I have been using some of the electrical modalities, I have tried out the method of using a dilator electrode, using different sizes—Galvanic current, negative pole attached to dilator and positive pole to large pad on lower abdomen. Not more than three to five milliamperes should be used, as it is desirable to avoid any caustic or burning effect, as scar tissue is the last thing we desire.

In some of these cases we have what appears like scar tissue at the point of angulation. I turn the current on gently after the tip of the electrode is introduced into the cervix and then make gentle but continuous pressure. The cervix will be felt to gradually yield as if either relaxing or softening. Some of the cases have required several attempts before I could get through the internal os with the smallest dilator.

By repeated treatments one can use the next larger size until finally the largest size goes through. In this class of cases painful periods are entirely relieved. There is a tendency for the condition to recur, and it is altogether advisable to tell the parents of this tendency and instruct them that even after the periods become painless and after the largest dilating electrode can be introduced, that these cases should have two or three treatments between periods for a few onths.

No great force should be used, but continuous gentle force while the current is on. Cut off the current before removing the electrode. When the electrode goes through the internal os is easily determined by the loss of resistance. Getting the vagina dilated so as to use the speculum is really the most disagreeable part of this treatment in young girls. It is surprising to see how some of these cases, run down and worn, would build up after the treatment, gain flesh and strength and a good color.

In the class of cases due to defective development, we have a different problem. The negative current will soften tissues and determine a greater blood supply to the part upon which the negative pole acts. Hence the good prospect of success in these defective development cases if seen early and treated persistently; not expecting too much in a short time, not too frequent treatments and not too strong currents; but using dilating electrodes not only to convey the current to the uterus but to dilate and help develop the cervix uteri.

Of course the physician should not forget that *he is a physician*, and must use all other proper means of building up his patients, for these defective development cases are usually of poor general physique. This method sometimes replaces and often supplements other kinds of treatments.

□ □ □

From Dr. Grover's Column

The new metal mesh electrode fits all contours of surface and when held in place with a bandage, electrical contact is assured.

□ □ □

Physiotherapeutic measures which conducted us safely through the most critical stage of the late war should be remembered with approbation.

□ □ □

An autocondensation dose of 300-600 milliamperes should never be exceeded in cardiovascular disease.

Hypertension

Dr. N. M. Meals, Callensburg, Pa., writes: "With my physiotherapy apparatus I have materially aided many cases of rheumatism. Cases of Hypertension, and Hypotension, if the heart is reasonably good, can be greatly benefited and their lives prolonged. I will give you two case reports: "Case 1—Miss C., age 17, had scarlet fever in December, 1920. February 18th she came to my office, and on examination made diagnosis of Acute Bright's disease. The urine was at least 30 per cent albumin. Technic of treatment: patient was placed on the auto-condensation pad and given the D'Arsonval current for 20 minutes each day, for one week—600 to 1000 Milliamperes being employed.

"Then the treatments were given twice a week for two weeks longer, after which there was no albumin to be found. Patient was discharged as symptomatically cured. Two months later she was married, and I have not heard from her since.

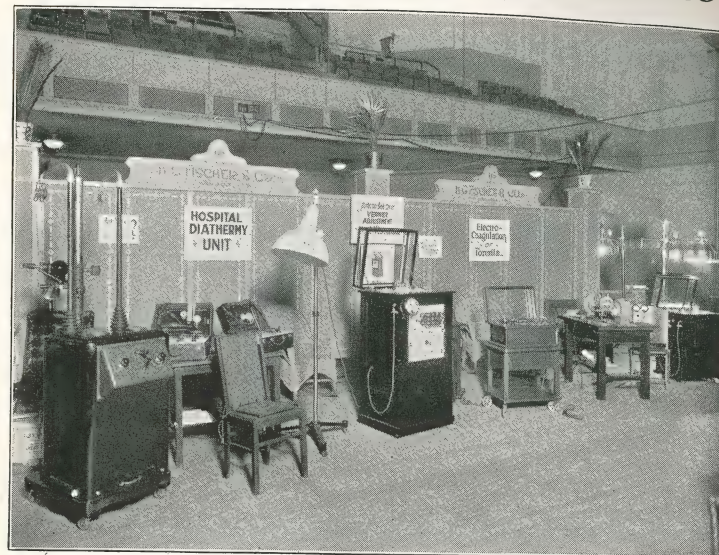
"Case 2—A young man, about 28 years old, came to my office in 1921. After thorough examination I made diagnosis of Bright's disease. Treatment technic same as in case No. 1: about 800 milliamperes D'Arsonval current each day for a week; then twice a week for three weeks longer. Discharged as symptomatically cured.

"As you have said, Diathermy is a current that has been misused and much neglected. I believe in the standardization of Medicine, Serums, Surgery, Organotherapy and Zone-therapy. I use any one of these modes of therapeutics that is indicated in the treatment of disease. Some of our medical brethren throw cold water on Physiotherapy—and why? Because of downright ignorance, or a want of investigation as the case may be. I would not, and could not practice medicine without Electro-Physiotherapy."

□ □ □

Ask any doctor who uses Diathermy.

The Fischer Company Booths at Frisco



Voted one of the finest Exhibits at the A. M. A. Meeting,
June 25th to 29th, 1923

Exceptional interest was manifest around the splendid Fischer booths due to the new features which have been added to our apparatus. Everybody seemed intensely eager to know all about the latest Diathermy and Electro-coagulation methods.

Tonsil Coagulation easily led all other subjects in point of interest—in fact, the eagerness of the physicians to absorb as much information as possible kept six of our men constantly on the jump, and the 6 o'clock gong at closing time was welcome music each day.

We expect to have another splendid article on Tonsil Removal in our August number. Watch for it.

Electro-Coagulation Treatment of Hemorrhoids

W. McCABE, M. D., Chicago

Hemorrhoids may be successfully treated in the physician's office, and thus save the patient the usual hospital expense and loss of time. Most patients have a dread of the hospital, and especially any reference to an "operation."

Technic

Place your patient on a table on his left side, with the left leg stretched straight out and the right knee flexed and resting on a pillow.

Apply a strip of adhesive tape, about 2 inches wide and 7 inches long, on buttocks on line with and about an inch and one half from the anus on each limb. Fasten gauze bandage to ends of adhesive material with safety pin, pass around to front and tie opposite ends securely over lower pelvis, using as retractor.

In order to get the confidence of the patient that there will be little or no pain, it is well to use a non-vacuum electrode in the rectum for five minutes. This application will also have an analgesic effect. Where parts are very sensitive or where a prostatitis is present, use a soothing application prior to treatment.

When possible, follow this with vibration, using the Pennington Cone, for the purpose of thoroughly dilating the sphincter muscle.

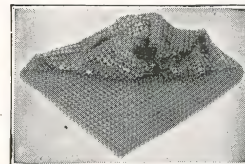
Use any good local anesthetic, and clamp down the hemorrhoids you wish to coagulate. Do not attack too many at one time. If an entire circle of tumors are present, work on only half—the patient will have no fear of the second operation, but will return readily to have the balance taken care of.

The indifferent electrode should consist of a piece of mesh 12 inches square. Cover thoroughly with warm soap lather and place under the patient, against the bare skin.

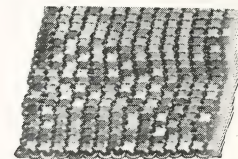
New Fischer Diathermy Accessories

Flexible Mesh Diathermy Electrodes

The most flexible *all-metal* electrode ever designed.



A Mesh Electrode



Section of Electrode showing exact size of links

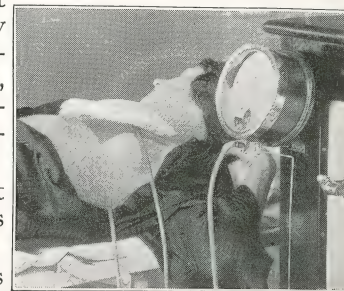
Fits any part of the body like a glove, regardless of shape or contour.

May be employed in connection with Diathermy, Electro-coagulation, D'Arsonval Auto-condensation, Sinusoidal, Galvanism or any electrical modality where perfect contact on the skin is necessary.

Composed of a series of flat links of German silver, they are flexible, practically indestructible, easily sterilized, and forming an almost continual flat surface to be applied to the skin.

Endorsed by the best known physiotherapists everywhere.

Available in several widths and any desired lengths.



Application Mesh Electrode

Especially valuable for use on the knee, elbow, wrist, hand, spine, over the shoulder; in fact wherever it is difficult to make *perfect* contact with any other means.

This mesh material makes excellent cuffs for use on the limbs. Employ warm soap lather as a medium between the mesh and the epidermis, and hold the cuffs in place with elastic bandage.

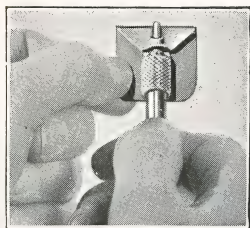
When treating a patient with a so-called "hollow spine" place a pillow on your table, lay the mesh on top, and be assured of *good* contact on every square inch of surface.

Once tried, always used. There are none better!

Cat. No. 844—6 inches wide—code SAFROL....per lin. inch...\$0.30
 Cat. No. 870—8 inches wide—code SAGGER...per lin. inch... .40
 Cat. No. 871—10 inches wide—code SAGUMS...per lin. inch... .50
 Cat. No. 872—12 inches wide—code SAILER...per lin. inch... .60
 Cat. No. 873—15 inches wide—code SAKIEH...per lin. inch... .75

Will be cut to any lengths, on order.

FISHER DIATHERMY ELECTRODE CONNECTOR



Catalog No. 851

A simple device to fit the No. 1330 Diathermy Cord tip. Made of spring brass, nickel-plated.

The contact surface is flat, with small sharp protuberances to prevent slipping from the electrode. Designed for use with the Mesh Electrodes and Elastic Bandage.

Cat. No. 851—Flat Connector—
 code MESCON—each.....\$0.30

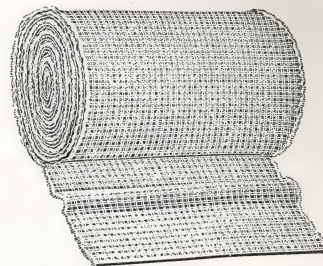
THE FAHNSTOCK CLIP

A spring clip which is quite satisfactory for use in connection with Mesh or Block Tin Electrodes, which will hold equally well with any size cord tip or wire.

Cat. No. 852—Spring Clip—code FACONN—each.....\$0.15

ELASTIC BANDAGE

Many methods have been advanced for holding Diathermy Electrodes in place, especially on the limbs, but nothing excels Elastic Bandage for the purpose. The Mesh material, or block tin, may be bound securely in place in a moment's time, and the electrodes thus bound will remain in position as long as desired.



Catalog No. 854

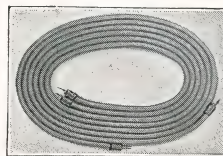
Employing Elastic Bandage is the only known method of binding Diathermy Electrodes to the limbs, which will permit the patient to move if necessary for the sake of comfort, without the electrodes shifting.

These Bandages may be washed, and always kept sanitary.

Cat. No. 854—3 inch width—code ELBAND—yard.....\$0.35

NEW FISCHER DIATHERMY CORDS

Diathermy Cords are constantly getting wet, and when covered with a mercerized or silk webbing they are usually stained and discolored after but a few days' use.



Catalog No. 1330

Cat. No. 1330—code NEGRO—6 foot pair.....\$2.50

Here are our much improved Diathermy Cords, covered only with pure gum rubber. They are very flexible, easily kept as clean as when new, and constructed to last indefinitely.

BIFURCATED DIATHERMY CORDS

Made up in the same style and of same material as our No. 1330 Cords, but with a 4-foot single length branching into two cords, each 2 feet long.

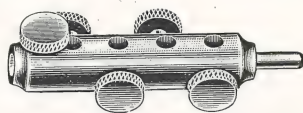
Cat. No. 1332—code SALIFY—each.....\$2.00

FISCHER MULTIPLE CORD CONNECTOR

Often three or even four cord connections are desirable from one terminal and the ordinary Bifurcated Cord has not sufficient capacity or usefulness.

Here is what we have to offer to fill that void. The small end tip is fastened into the proper binding post on your machine, and you may carry as many cords from it as desired.

Cat. No. 865—Multiple Connector—code SABLE.....\$0.65



Catalog No. 865

SAND BAGS

Just a few words on the subject of Sandbags. After the Diathermy Electrode is placed on your patient, as for example on the chest when about to administer a treatment for Pneumonia, the very best way to keep it there is with a properly designed Sandbag.

Not the heavy, bulky, thick variety, that will slide off at the first move of the patient, but one carefully designed for the purpose. Take a strip of heavy cloth or light canvas about 10 inches wide by 20 inches long, and fold it over lengthwise to form a bag 20 inches by 5 inches. Sew cross seams 5 inches from each end to form two pockets each 5 inches square. These pockets, only, are to be filled with sand, leaving the long 10-inch center strip flat.

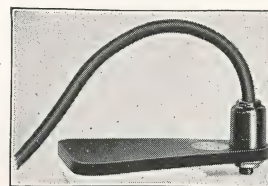
When this bag is placed over your patient, the flat part only bears on the electrode; the weights hang down at the sides. Try it.

The Fischer Electro-Coagulation Foot Switch

As illustrated, this Foot Switch lays close on the floor. A touch of the toe makes and breaks the contact.

Sufficient insulation has been used to make it shock proof. It is light in weight, easily moved about, yet keeps an upright position on the floor.

The foot-plate is of heavy sheet fibre. The cable is very flexible, and covered with pure gum rubber; it may be washed and kept as new always. Cable terminals will be furnished to fit any style apparatus.



Catalog No. 1205

Catalog No. 1205—Fischer Electro-coagulation Foot Switch, with 8-foot cable, code THALES.....\$12.00

Catalog No. 1206—Extra rubber covered cable, code TIBERI, foot. .10

□ □ □

New Two Pole Morse Electrodes

Suggested by Dr. Frederick H. Morse, of Boston, for treating localized conditions in the rectum and vagina.



Catalog No. 1852—Rectal Electrode—MASREC.....\$5.50



Catalog No. 1853—Vaginal Electrode—MASVAG \$5.50

Helpful Suggestions

J. G. Putnam, M. D., of Everett, Wash., writes us a lot of pleasant information, among which we find:

It is often necessary to use talcum powder on patients to facilitate treatments with glass electrodes. The electrodes become rather foul, usually, and I have found that the easiest way to clean them is a bit of scouring with Old Dutch Cleanser and warm water. The dirt just fades away.

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My "service man" told me to put a bit of mineral oil in the leyden jars on top of the salt water. It prevents creeping and evaporation of the solution and does not impair the efficiency of the jar.

□ □ □

If the oil seeps from the transformer box by way of the terminals, loosen the screw plug to allow an expansion and contraction of the oil and air within the tank.

□ □ □

Dr. Greenough, of the Collis P. Huntington Hospital staff, stated recently: "The 'cure' of cancer by radium or the X-ray should not be over-emphasized. Radium alone, or X-ray, or Surgery—none has been an effective weapon against the disease. The best results are obtained from a proper combination of these methods in accordance with the nature and development of the growth."

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If you are not a Fischer Booster you are not acquainted with the service we render. May we explain?

□ □ □

Remember it is always the busiest man who gets more business.

Epithelioma of Lower Lip

R. E. HOLMES, M. D., Windsor, Ont.

Male, age 56 years, had "this sore" on lip for 7 months. Had 12 X-ray treatments from the Doctor in the town where he lived, but the "ulceration" kept on spreading. When patient presented himself, three-fourths of the lower lip was involved and down to the level of the gums at one point.

Under local anesthetic (1% novocain) we electro-coagulated the entire field, using Fischer's "FO" Machine, 300 Milli-amperes, with pointed electrode. This patient has not had any pain, nor any odor from his lip since we operated on his cancer. Now, six weeks later, it is all healed over with healthy mucous membrane except at the deepest erosion which exposed the full length of his teeth, but at present time has filled in to about half way up his teeth.

We would advise general anesthesia, as the electro-coagulation is very painful when one is operating close to the roots of teeth.

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The Question

One of our readers asks:

"Can fulguration be used instead of the usual 'saw and scissors' to rid the nose of hypertrophied turbinates? If so, what is the technic?"

Answer, from Dr. T. Howard Plank:

"Coagulation can be used instead of saw and scissors for nasal hypertrophies. Use about 300 to 500 milliamperes through a non-conducting speculum, rubber preferred. Time sufficient to thoroughly destroy mucous membrane and the portion of the bone which is desired to destroy.

"The soft tissues slough out in about two days, dead bone can be removed in about a month or six weeks.

"The indifferent pole can be placed any place on the body. If the area is small and the patient controllable, local anesthetic is sufficient, otherwise hyocine morphine anesthesia."

The Question Box

First permit us to repeat—we are striving in each issue of "Fischer's Magazine" to provide a "missing link" between your electrical equipment and your patients in the way of original articles, carefully selected reprints and readers' comments.



Every unit in the entire Fischer Company organization is constantly on the alert for methods of producing better apparatus, with an eye to efficiency; to improve means of application; to create a better understanding among operators, generally, regarding not only the various electrical modalities but their methods of production, as well. Opinions are so diverse that we feel everything possible should be done to clear the atmosphere.

Charles A. Palmer, M. D., of Red Bank, N. J., asks a few pertinent questions, adding, "I will be pleased to see both sides discussed in your wonderful little Magazine." He heads his letter: "Heat and Heat Only?"

"I can hardly see an article any more on Diathermy where the writer does not insert 'Heat and Heat Only.' Now I wish to be convinced that that is so.

"If it is so, what causes the heat? You say 'oscillation'—'tissue resistance.' Very well, isn't that something to count on besides heat? You say Diathermy reduces hypertension and stimulates the general circulation; also the lymphatic circulation and stimulates the blood in several respects; causes elimination and reconstruction (metabolism), etc., etc. My, what a lot Diathermy will do when we read about it! But is it 'Heat and Heat Only?'"

"Now these are only a few things that Diathermy is supposed to do, and if Diathermy is so effective, where do any of the other electrical modalities deserve more credit? Do they leave a deposit of electricity that Diathermy does not?"

"When we apply the Sinusoidal current to each end of a particular muscle, and get contraction, do we get contraction only? Or when we use it to relieve pain do we get the 'dope' effect only?"

"I suppose when we apply the constant (Galvanic) current we get reduction of inflammation *only*, followed by the consequential results.

"I have also seen in print from (supposed) good authority that Auto-condensation and Diathermy are one and the same thing. Who believes that? Define the difference, please. Oh, well, along about 1930 these subjects will be brought up again and then several will pop up and say 'Why, I announced that way back in 1923'."

Editor's Note: Undoubtedly these same questions run through the minds of a great many of our readers, and each has formulated a reply to suit his or her own opinion. We, also, have answers for these questions—but how would *you* answer them? Just send your response to The Editor, who will keep a careful record and publish the various viewpoints in our August or September numbers.

□ □ □

The congestive stage of pneumonia is amenable to diathermy. The passive hyperemia is displaced by active hyperemia and the formation of inflammatory exudates prevented; the disease is promptly robbed of its succeeding stages, the patient recovers, leaving the attending physician very doubtful of his diagnosis.

Actinic Therapy in Rickets and Malnutrition

NEWELL JONES, M. D.

It is stated in this paper that 65 per cent of the children under eighteen months of age who live in the middle western part of this country have rickets in some degree or other, and that this condition is found much more frequently among children of the well-to-do than among the poor.

Dr. Jones believes with Bifield and Dean that early rickets predisposes to later chronic upper respiratory infections. Rickets produces deformities which prevent sinus drainage, produces a hyperemia of the mucous membrane throughout the whole gastro-intestinal tract, and results in a general muscular relaxation. All these conditions make the child much more susceptible to colds.

Hess of New York who uses direct sunlight in the treatment of rickets has secured most happy results. Pure codliver oil and the actinic ray will accomplish the same results. Direct sunshine must be from outdoor exposure and the whole body must receive a good coat of tan from the treatment to be of any effect, therefore this is an unfeasible method in any but a warm climate as the sunshine must be unfiltered by glass. In his treatments Dr. Jones uses the air cooled lamp. Exposure at first is from one-half to three-quarters of a minute at a distance of from 20 to 24 inches, the child lying prone and the treatment being given both front and back. To avoid frightening the child it is taken into the treatment room but not given any treatment the first time, so that it may grow accustomed to its surroundings there.

Two treatments per week are given at first and the number is gradually increased until one is given every day. Distances must not be less than 10 to 18 inches. Some children can be worked up to a three and one-half minute exposure; one must be guided in this by the reaction. The whole body must be stripped, the eyes are protected by goggles or a bandage. The fair-skinned child as a rule can stand only about fifty per cent of what a dark-skinned child can receive.

In two or three weeks results will begin to show in better appetite, better functioning of the gastro-intestinal tract and a cessation of the sweating which is so characteristic in these cases. Later on the teeth will begin to hurry along, but bow legs, the doctor remarks, are not made over in a day. The hemoglobin percentage and the red blood cell count are greatly increased by the treatment.

Every case of rickets in a child, under eighteen months of age, treated by Dr. Jones has improved if given a fair trial. Two very extreme cases are reported as cured. After eighteen months of age treatment will accomplish nothing except to build up the general nutrition of the body.

From a paper read at Omaha, December, 1922

□ □ □

We are very often called on to recommend books on the subject of Physiotherapy, generally, and offer the following:

On Diathermy—	
Sampson's "Physiotherapy Technique".....	\$6.50
Cumberbatch's "Diathermy".....	6.00
Saberton's "Diathermy".....	2.25
Grover's "High Frequency Practice".....	4.00
On Wave Currents—Morse's "Wave Therapeutics".....	
	2.50
On High Frequency—Grover's "High Frequency Practice".....	
	4.00
On Constant Currents—	
Sampson's "Physiotherapy Technique".....	6.50
Grover's "Electro-therapy".....	4.00
Morse's "Wave Therapeutics".....	2.50

All of these books are carried in stock, and delivery made on receipt of orders.

□ □ □

Diathermy isn't theory—it is practical fact.

□ □ □

We suspect that many of the folks who have the reputation of being hard-boiled eggs got that way from being in hot water most of the time.

A PAGE OF FUN



Preparedness

Bang! went the rifles at the maneuvers. "OO-o!" screamed the pretty girl—a nice, decorous surprised little scream as she stepped backward into the arms of a young man.

"Oh!" she said blushing. "I was frightened by the rifles. I beg your pardon."

"Not at all," said the young man, "let's go over and watch the artillery."

□ □ □

Fact, Not Fancy.

"If you please, ma'am," said the servant from Finland, "the cat's had chickens."

"Nonsense, Gertrude!" returned the mistress of the house. "You mean kittens. Cats don't have chickens."

"Was them chickens or kittens that master brought home last night?"

"Chickens, of course."

"Well, ma'am, that's what the cat has had."—Youth's Companion.

□ □ □

Extravagant

Small Boy: "Take me to the movies muvver."

Mother: "Now then, haven't yer just had a haircut? Yer always craving after amusement."

□ □ □

P. D. Q.

"The average woman has a vocabulary of only eight hundred words." It is a small stock, but think of the turnover.—Oakland Tribune.

Another Ford Story

Two gentlemen were uncertainly flivvering their way home from a party.

"Bill," said Henry, "I wancha to be very careful. Firs' thing, y' know you'll have us in a ditch."

"Me?" said Bill in astonishment, "why, I thought you was drivin'."

□ □ □

Ouch!

Cholly: "You know, last year the doctor told me if I didn't stop smoking I'd be feeble-minded."

Grace: "Why didn't you stop?"—Cougar's Paw.

□ □ □

Diplomacy

She: "John, do you prefer blondes or brunettes?"

He: "Yes, dear!"

□ □ □

Motorist—"Madam, I am sorry that I killed your dog. May I replace him?"

Spinster: "This is so sudden!"



THOUGHT TO BE
WORTH WHILE

MUST COMPLETE
ITSELF IN ACTION.

FISCHER'S MAGAZINE



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347

AUGUST, 1923

Every Life is a Strife—With Temptation or With Conscience.

Most of us Want to be Right, but few of us like to be Put Right.

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. I

AUGUST, 1923

No. 11

Physiotherapy

The word physiotherapy is one of those high sounding forms of speech that cause the average person, professional or lay, to conjure up some mysterious medical means known only to the initiated. As a matter of fact we all use physiotherapy to a greater or lesser (usually lesser) extent. In putting a patient to bed we employ physical means of therapy of the greatest importance, for we change the mechanics of the circulation. In applying a surgical dressing we use physical treatment.

External applications of heat have long been employed in the form of hot water bags or poultices of various kinds. In this connection it is interesting and significant that the heat of the living body was formerly believed to be of an entirely different nature from that which emanated from any non-living source. A puppy dog was considered a more effective therapeutic agent than a hot water bag, and the heat from a young human body was sometimes prescribed for the treatment of the elderly invalid.

Massage and both passive and active motions have been used more or less from time immemorial, as has also hydrotherapy. The morning cold plunge, which has been recommended for every ailment to which flesh is heir, is but a simple form of physiotherapy. Electricity, in some form or other, has had its vogue, as have sunlight and colored lights. There have been elaborations in the applications of posture, movements, rubbing, heat, baths, electricity, and light, but

after all there is little that is new, and because they do not savor so much of the occult as does chemotherapy, if we may use the term for drug treatment, they have been neglected sadly by the profession, which has preferred to wield the prescription pen or the carving knife, to the neglect of means which are less mysterious and spectacular. As a consequence, practitioners with neither knowledge nor skill have been reaping a harvest by the hit or miss application of physical means. As we have said in these pages before, it is high time the profession was awakening to the importance of such therapy.

We have heard much more of physiotherapy since the war, in connection with injuries, and, indeed, its importation in this connection was one of the good things which we gained from the war. For a quarter of a century these means had been highly developed in Europe on account of the monetary importance of returning an injured workman to his job at the earliest possible date. The shortening of convalescence reduced the workman's compensation accordingly. When the war came the same machinery was ready prepared for application for the speedy return of the wounded man to his place in the ranks. There was nothing new about it except to American eyes. Since the war one hospital in this country, which deals to a large extent with the wounded from the ranks of labor and which has established an elaborate physiotherapy department, finds that, in its fracture cases, the saving in time of recovery, compared with their records under the older methods, is from ten to thirty per cent., according to the nature of the injury, while the recovery is, also, more complete.

But physical means are as useful in medical cases as in surgical, and even where they accomplish little directly, from a physical point of view, the very fact that *something is being done for the patient* produces an effect mindwards which reacts for speedy improvement or cure.

—From an Editorial in the *New York Medical Journal*, July 1923

Diathermy in the Treatment of Diseases of the Bladder in the Female.

Iwan v. Büben (*Zentralblatt für Gynäkologie*, July 15, 1922) asserts that diathermy is a valuable adjunct in therapy, owing to the promotion of the healing power associated with the increased temperature and resulting hyperemia and the other physiological powers, especially in regard to its powers of relieving pain in the painful cystitides and in tenesmus. Diathermy is produced by means of an electric current of high tension and rapid alternation, which produces heat in the deeper tissues. The amount of heat developed depends upon the intensity of the current, the resistance of the perfused tissues, and the size and form of the electrodes. A large and a small electrode are used, the current being made to pass from the larger electrode to the smaller one, so that most of the current and heat are developed at the latter. If the electrode is too small, a coagulation of the tissues results with the use of strong currents; this is called a cold cautery and is used with good results for the extirpation of bladder tumors, chiefly papillomata.

The author treated with diathermy fifty cases, chiefly of cystitis, with incontinence and painful urination. The treatment may be extravescical or intravesical. The extravescical treatment is given with olive electrodes (with a thermometer embodied in the instrument) applied intravaginally; the external electrode, consisting of a lead plate as large as the palm of the hand, is applied over the bladder at the symphysis. The results with this form of treatment are not as good as those obtained with the intravesical form. For this form of application, the author devised an irrigating electrode, through which the bladder is first filled with one hundred to three hundred c. c. of physiological saline solution and the electric current is then applied in the same manner as in the extravescical treatment. This treatment is given three times weekly for ten to twenty minutes, with a current of 0.5 to 1.0 ampere. Marked improvement in the symptoms is noticed after ten treatments. The best results are obtained in the cases of painful urination and in enuresis nocturna.

—*New York Medical Journal*, July, 1923

Tonsillectomy

Electro-Coagulation and Desiccation

By A. M. MacWhinnie, M. D., Seattle, Wash.



Theories regarding the function of the faucial tonsils are many and varied and so far but one is accepted clinically. There is no dissension, clinically, from the belief that the tonsils furnish a secretion for the lubrication of the pharynx and act as a support to hold out the pillars in their advanced position in the pharynx. The ablation of the tonsil and its capsule obliterates this function completely or

partially and the arch atrophies, as well as the palatoglossus and palatopharyngeus muscles.

There is a widening of the faucial space and at the same time a loss of action of the soft palate, tongue and larynx. It is only on account of these functions being compensated by other tissues that the voice retains some of its quality. Even so, the throat tires more quickly than under normal conditions, and dryness is frequently complained of. * * *

In reviewing the literature, one is impressed with the various opinions of the different men as to what is an infected tonsil. One can only conclude that no precise and definite standards have been accepted.

* * * The treatment of tonsillitis seems today to be based upon infection. * * * There are no definite criteria for what constitutes the cardinal symptoms for finally determining the necessity for removing the tonsils; each individual physician uses his own judgment. * * *

When we have definitely established that the tonsils are the seat of infection, there is but one course to pursue—treatment of the blood chemistry and a complete eradication of the tonsils by some method that will leave the throat with as great or greater functioning power than existed previous to the operative procedure. The consensus of opinion is that

the operative procedure of choice is one in which the tonsillar capsule, so called, shall be left intact and thereby retain as near as possible the complete functioning power of the palatoglossal and palatopharyngeal muscles. Following the sharp cutting operations, we have all been chagrined to see the various deformities amounting almost to distortion, rapid tiring of the voice following speaking, as well as of the individual physically, so that many speakers, who previously had been able to speak for an hour at a time, found themselves completely prostrated after fifteen minutes' speaking.

Kenyon asserts that ninety-five per cent. of the patients who have been operated upon by the cutting method show a deformity of some kind. This must strike one as very strange, for of all operators upon the tonsils in this country surely more than five per cent. are first-class. Many of us have dissected out most beautifully the tonsil and its complete capsule, with apparently no injury to the palatoglossus and palatopharyngeus muscles or the superior constrictor, congratulating ourselves on the beautiful result, and then, at the end of say three months, are chagrined to see the fossa fill up level with the pillars, retarding their action. In the cases where this does not take place, a gradual thinning out, an atrophy of the palatoglossus and palatopharyngeus muscles takes place with loss of functioning power in the voice from lack of capsule support.

* * * In operative procedures upon the tonsil, one must never lose sight of the accidents which may occur. The anomaly of the arteries in elderly patients; the possibility of hemorrhage in proportion to the clotting time of the blood and blood pressure; pulmonary abscess; anterior dislocation of the atlas; pain in the tonsil region, neck, and larynx, said by Justus Matthews to be due to the larger branches of the glossopharyngeal nerve being injured.

What shall be the operation of choice? One in which the loss of blood and shock is reduced to a minimum and in which the patient will be better off physically and the voice equal to or better than before the operation. No cutting operation

that removes the entire capsule can give as good a result as one in which there is a complete removal of all the tonsillar tissue leaving the capsule intact.

* * * With the intimacy that exists between the capsule and the superior constrictor muscle, and the dangers that attend cutting operations, a procedure that will eliminate all tonsillar tissue and leave the capsule intact to act as a supporting membrane to the superior constrictor, glossopharyngeal and palatopharyngeal muscles is the ideal method for eradication, with the highest possible physiologically functioning throat. Makuen states that he believes leaving the capsule intact is perfect surgery. No cutting operation that involves the removal of this capsule can insure the operator, as well as the patient, that he will have a throat which will function physiologically.

In removing the tonsils we find that there is pus formation in or around the tonsils, with the result that a certain amount of absorption of pus into the system takes place, evident for a week or ten days, and sometimes longer. Any procedure that will eliminate this, it seems to me, is ideally perfect.

We must never forget that we are operating up into the cervical region, and it has happened that serious infection has resulted from opening this area. In reading over operative procedures, we find numerous instances where most operators make an anterior and posterior incision, cutting through into the intrapharyngeal aponeurosis, thus taking away one of the supports of the anterior and posterior pillars.

It may seem presumptuous on my part to offer a new method for tonsil eradication, leaving the capsule intact, when there have been so many tonsil operations recommended, but only after six years use is it offered.

With electro-desiccation or thermo-coagulation all the difficulties enumerated can be avoided. One must remember that the equipment should not consist of a box such as sold by some manufacturers. One must have a machine of ample power with a milliamperemeter so that the current can be

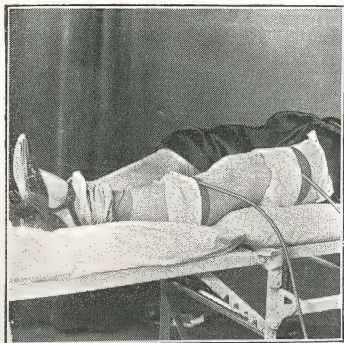
measured accurately. Experience, alone, will give one the desired information as to the length of time the current should be applied and the number of milliamperes required for a thorough eradication of all tonsillar tissue. The variation in the amperage is from 100 to 1,000 milliamperes, depending on the consistency of the tonsillar tissue and its depth. Roughly speaking, 800 milliamperes suffice with the active electrode well inserted in the tonsil and the indirect electrode on any other part of the body * * * with the coagulation method the tonsillar tissue disappears in about ten to fourteen days following the application * * *. It can be stated that this method is absolutely painless.

—*Extracted, New York Medical Journal, June, 1923*

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Effect of Radiation with Mercury Vapor Quartz Lamp

From the experiments reported by Hume it is apparent that irradiation with the mercury vapor quartz lamp can prolong normal growth on a diet almost free, or free, from vitamin A. Whereas without irradiation growth ceased to be normal after from seven to ten days, with irradiation it continued to be normal for from thirty-five to fifty days. Symptoms of vitamin A deficiency then began to appear, and symptoms of xerophthalmia set in earlier than in control animals. Attempts to revive growth and to cure xerophthalmia by irradiation of animals which had long (over ninety days) been on a deficient diet failed completely; the animals seemed, if possible, to go to pieces more rapidly. Irradiation of rats which had been for shorter periods (from seventeen and thirty-five days) on a vitamin A deficient diet produced a growth response which appeared to be inversely proportional, in its duration and extent, to the length of the previous period of deficient diet. The general conclusion drawn is, that there is an interaction between vitamin A and light for the growth of rats, but that the action of the light is not to produce a photosynthesis of the vitamin.



Medical Diathermy — Cuffs of Mesh Material above and below the knee.

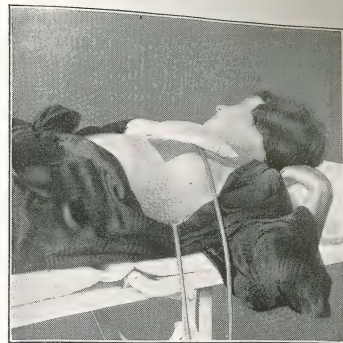
Splendidly adaptable to the latest technic of Medical Diathermy, Surgical Diathermy, Electro-Coagulation, Auto-Condensation and High Frequency.



D'Arsonval Auto-Condensation.

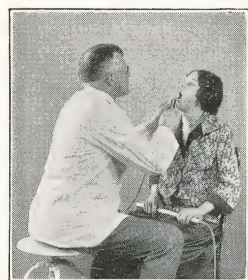


**The Fischer Portable Diathermy Apparatus—
Catalog No. 1246—Price \$265.00 complete.**



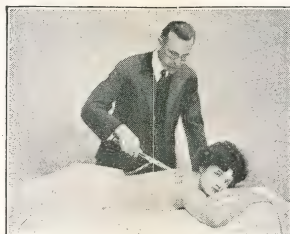
Pneumonia Treatment with Diathermy — Electrodes of mesh placed posteriorly and anteriorly.

Complete, efficient, reasonable in price, safe, light in weight, neat in appearance and small in size.



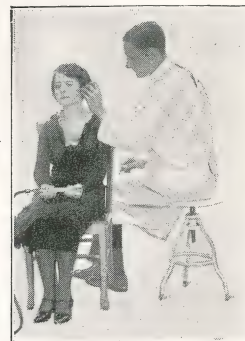
Electro-Coagulation of Tonsils.

A complete descriptive pamphlet is yours for the asking.



High Frequency Application to Spine.

Let us tell you all about this latest development in the Physiotherapeutic field.



Indirect Fulguration.

Manufactured by H. G. FISCHER & COMPANY, Chicago, Illinois

Advertisement

Treatment by Diathermy

W. J. TURRELL

The first effect of diathermy is an increase in the temperature of the part treated; the later effects are relaxation of the tissues and dilation of the blood vessels with a consequent increase in the blood supply to the part treated. The therapeutic effects of diathermy are therefore explained by the lowering of the blood pressure, the relaxation of spasm with the relief of pain, and the improved nutrition of parts whose blood supply has been deficient.

It is in the relief of spasm and pressure, and therefore of pain, that diathermy finds one of its important indications in clinical practice. Neuritis, deep-seated pain such as that associated with dysmenorrhoea, the spasm of a ureter excited by the passage of a calculus, the hypertonicity of the lumbar muscles in lumbago, or of the neck muscles in torticollis, the muscular rigidity of local tetanus, the pain of a recently sprained ankle, are usually markedly relieved and often cured by this treatment. Atrophic conditions improve very much because of the nutritional effects of the increased blood supply.

In surgical diathermy the heat is concentrated on one spot, while in the medical applications it is distributed over a large area. Surgical diathermy differs from the destruction of tissue by heated irons or the Paquelin cautery in that, when properly applied, it effects destruction by heat coagulation rather than by charring or incineration.

Intravesical growths, haemorrhoids, benign or malignant superficial growths, lupus, moles, enlarged tonsils, naevi, etc., are suitable for this treatment. Diathermy is also a delicate and efficient method for depilation.

From Brit. M. Jour.

□ □ □

X-ray keratoses are best treated by desiccation; X-ray ulceration by actinic rays. Diathermy materially assists in either case.

Blood Pressure Briefs

By Burton Baker Grover, M. D.

Hyperpiesia is a more common cause of retinitis than chronic nephritis. Treatment: Autocondensation for hyperpiesia and kidney diathermy for nephritis.

□ □ □

Heart force does not per se produce hypertension but the conditions prevailing in the blood vessels, chiefly in the arterioles and capillaries. Loss of elasticity calls for increased heart force to overcome the resistance.

□ □ □

Normal blood pressure is more or less maintained by the capillary network which acts as a suction pump. This function is easily disturbed by nervous excitement, worries, etc.

□ □ □

Systolic pressure may be as low as 90 during sleep and high as 180 during hard work. An occasional high reading does not constitute hypertension.

□ □ □

There are more diseased hearts in the normal blood pressures than in the low pressures.

□ □ □

Causative factors in HYPOTENSION, in order of frequency are: diseases of the digestive system, diseases of the vascular system, infections, psychoneuroses.

□ □ □

Ill-advised exercises "to keep fit" are frequent causes of hypertension and later on heart failure.

□ □ □

Use Diathermy next time.

□ □ □

Ask any doctor who uses Diathermy.

□ □ □

Diathermy isn't theory—it is practical fact.

Diathermy in the Treatment of Hypertension

By William Martin, M. D., Atlantic City, N. J.

Late President Amer. Electrother. Assoc.



The subject of hypertension is too large to enter into a discussion of it in more than a very condensed way in a paper short as this must necessarily be, therefore, it is the purpose to simply take up one phase of it, the hepatic engorgement, which is practically always present in all cases of high blood pressure.

We who are constantly treating these cardiovascular renal conditions in which hypertension plays an important part, realize the constancy of the hepatic turgescence and the general circulatory stasis of the various organs. That the liver contains normally one quarter of the body's blood, predisposes it to this stasis and it is the chief organ to so suffer. When we consider the important function of taking care of toxins, we can see how important it is that this function be kept up to the highest point of efficiency in order that the health of the body be maintained. With a circulatory stasis present to any extent, it can be readily seen how this function will be modified or entirely put out of commission.

We constantly see people who state that they are subject to "bilious attacks." These will in time naturally show a hypertension as the result of an over engorged liver, which is "laying down on its job," simply because the toxins cannot be eliminated, and the kidneys and other channels become overworked in the effort to do more than their duty.

It is important, therefore, in all cases of hypertension to examine carefully for an engorged liver, and even though it may not be markedly enlarged, treatment toward enhancing its functions should not be neglected. All cases of hypertension should receive some treatment of this organ, else the

work is not done. Whether this be by diathermy or the static wave, sinusoidal or other, matters little, so long as the result is secured. In the writer's opinion, diathermy should be used no matter whether one of the other two modalities is or is not used, but of course the use of the latter should be a matter of judgment. By this is meant, in cases of very marked hypertension, the diathermy is of importance, while the static or sinusoidal will be too stimulating during the period of the pressure height. Subsequent to a reduction to the point of safety, one or the other should be used in addition to the diathermy, as the result will be more quickly accomplished. In the writer's judgment, the static wave current is then the current of choice.

In order to be effective, diathermy must be given in sufficient dosage and for long enough periods to make a marked impression upon the circulation of the organ. This will mean large electrodes with current strength to meet the proper surface measurement, and for at least a half hour or longer, and treatments given daily at least for a time, when they can be given on alternate days.

In using diathermy, it is not to be understood that this displaces auto-condensation, for it does not. The latter is equally important and the two work together beautifully, and all cases should have this double team work for best results. With this goes all the care usually necessary along lines of diet and other attention, and of course this is understood.

While this short paper cannot do other than touch the high spots, the writer feels its real purpose is to press upon the minds of the readers the necessity of clearing up all hepatic stasis in all cases of hypertension, as this is perhaps the keynote of success in these usually intractable cases.

Maryland & Pacific Aves.

□ □ □

We suspect that many of the folks who have the reputation of being hard-boiled eggs got that way from being in hot water most of the time.

More About Mesh Electrodes

"They are wonderfully adaptable"—

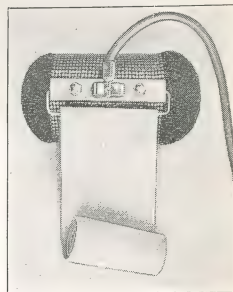
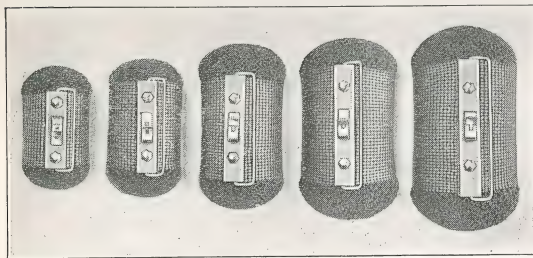
"Why did we not think of this idea before?"—

"Duplicate my order of June 6th., please. Those Mesh Electrodes are the best ever"—

"We use the Mesh Electrodes for all of our electrical treatments; they work equally well with Galvanism, Diathermy and Sinusoidal"—

Just a few of the nice things many of our customers and friends are telling us, daily. There seems to be no limit to the usefulness of Flexible Mesh Electrodes.

After receiving numerous suggestions that we make up this material in connection with a pad, we have constructed such a combination, which we now offer.



The Sponge Rubber padding may be washed and always kept clean. It is very soft, and conforms well to any uneven surface. The elastic bandage is entirely removable. Stocked in five sizes:

	Code	Price
Cat. No. 890—Sponge Mesh Electrode—2½"x3"	NEKTON	\$2.00
Cat. No. 891—Sponge Mesh Electrode—3x3½"	NEMEAN	\$2.30
Cat. No. 892—Sponge Mesh Electrode—3½x4"	NEOCEN	\$2.65
Cat. No. 893—Sponge Mesh Electrode—4x4½"	NEOGAE	\$3.00
Cat. No. 894—Sponge Mesh Electrode—4½x5"	NEOLGY	\$3.60

Cuff Method Diathermy Application

For employing the "Cuff Method" of applying diathermy to the limbs and joints, every physician should have at least one pair of Mesh Electrode Cuffs. These are strips of German Silver Mesh, 3 inches wide and from 12 to 24 inches long, with an arrangement fastened to one end for holding the elastic bandage. Very convenient and handy, and once used will be found indispensable.

	Code	Price
Cat. No. 900—Mesh Cuff and Clamp—3x12"	NEPHEW	\$2.55
Cat. No. 901—Mesh Cuff and Clamp—3x16"	NEPTUN	\$3.15
Cat. No. 902—Mesh Cuff and Clamp—3x20"	NEREID	\$3.75
Cat. No. 903—Mesh Cuff and Clamp—3x24"	NEROLI	\$4.35

Reserve the dates—October 15th to 19th

An important announcement, of vital interest to Physicians everywhere, will appear in the September issue of this Magazine.

Red Letter These Dates, and watch for particulars!

IN PREPARATION

Diathermy and its Application to Pneumonia

By HARRY EATON STEWART, M. D.

Attending Specialist in Physiotherapy, U. S. Marine Hospitals, N. Y.
Consultant in Physiotherapy, U. S. V. B. Hospital, New Haven, Conn.

Director, New Haven School of Physiotherapy

Formerly Assistant Director, Section of Physiotherapy, Office of the Surgeon General,

U. S. Army, and Supervisor of Physiotherapy, Bureau of U. S.

Public Health Service, Washington.

Author "Physical Reconstruction and Orthopedics."

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Ready Soon—Order Now

H. G. FISCHER & CO., Inc.

2333-43 Wabansia Ave., Chicago, Ill.

A black and white illustration of a man in a suit operating a large industrial machine, possibly a pump or press, with a woman and a child walking past in the background. The man is standing at the controls of the machine, which has a large flywheel and a lever. A woman and a child are walking away from the machine towards the right. The background shows a simple building with a chimney and a coiled hose on the ground.

"I don't care," was the reply, "I've counted 8,990 and I mean to see the last of those buckets if I stay here all night."

"You must have been walking carelessly," said the lady whose car had run down a man. "I'm very careful. I've been driving seven years." "Lady, that's nothing, I've been walking for fifty-four years."—Erie Dispatch.

"Gee! I wish I had a credit like that." □ □ □

Teacher—"This time we are going to have a little talk on wading birds. Of these the familiar stork is one—what are you laughing at, Elsie?" Little Elsie—"Oh, but teacher—the idea of there being any storks!"

Wife: "On your way home, will you ask that girl at the store to—"
Hubby: "The one with the blue eyes, blonde hair and dimples?"
Wife: "You needn't mind. I intended to go to town myself to-day."

Winter Guest (in wilds of New Hampshire to keeper of country store) — "Have you any tooth brushes?"

'Twas at a wedding yesternight,
A young man sat sedately,
I asked him if he'd kissed the bride,
He answered me, "Not lately."

The most severe critics of others are those who have not learned their own weaknesses.

FISCHER'S MAGAZINE



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348

SEPTEMBER, 1923

THE SUCCESS FAMILY

The Father is Work—

The Mother is Ambition—

The Sons are

Common Sense, Perseverance,
Honesty and Thoroughness—

The Daughters are

Character, Loyalty,

Sincerity and Cheerfulness—

The Baby is Opportunity.

Get acquainted with the "Old
Man" and you will be able
to get along with the rest of
the family.

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. I

SEPTEMBER, 1923

No. 12

Anent Progress

It has been stated, and truly, that we must either advance or retreat—that we cannot remain stationary.

For many years it has been the avowed purpose of H. G. Fischer & Company to **advance** the science of Electro-physiotherapy among physicians, and the development has been very steady—both apparatus and applied technic keeping a fairly even pace.

However, in the mails every day recently have come requests for information regarding some good school or central point where practical, first-hand instruction may be obtained bearing on the latest in physiotherapeutic technic, and it does seem that present-day equipment is just a few steps ahead of the average operator.

It is for this reason that we, **who desire at all times to hold the lead in such matters**, wish to pass on the benefit of our vast experience coupled with the technic as applied by aggressive and progressive physicians in the Electro-physiotherapeutic field, and are offering this opportunity in broader sense than has ever before been attempted.

Read our initial announcement on pages 8 and 9 of this issue, and see our October number, as well as the Journal A. M. A. and other leading medical papers for complete program and further information.

Diathermy in Diseases of the Circulatory System

By Elnora Cuddeback Folkmar, M. D., Washington, D. C.

Diathermy has a profound effect on the circulation. General diathermy tends to reduce hypertension and to raise hypotension to normal tension. Local diathermy causes a local dilation of the blood vessels of the part treated. Blood from the surrounding healthy tissues rushes into the dilated vessels. This influx of healthy blood replaces the stagnant poisonous blood, and increases cell metabolism and germ resistance.

Diathermy in Hypertension

Before treating a case of high blood pressure with diathermy, one should ascertain the cause of the hypertension. If it is a compensatory phenomenon, no attempt should be made to reduce it. In this case treatment should be directed to the renal, hepatic, cardiac, pelvic or other diseases of which it is a compensation. The author has reduced many cases of hypertension—190 to 240 mmHg.—by first treating the constipation and mucous colitis which was the source of the toxæmia.

In these cases, after the bowel is cleared of debris and enterotoxins, diathermy may be employed—general diathermy by means of the condenser pad or chair, or better still local diathermy through the abdomen. In general diathermy use 400 to 800 milliamperes of current during a period of 15 to 25 minutes. In local diathermy use large electrodes and pass a slowly increasing current of 500 to 2,000 milliamperes during a period of 20 to 30 minutes.

The blood pressure will usually be found to be reduced after this treatment from 10 to 30 mmHg. The skin will be warm and often bathed in perspiration, and the body temperature as indicated by a thermometer in the mouth, will be increased from one-half to one and one-half degrees. What takes place during the treatment? The peripheral vessels are dilated by

relaxation of muscular spasm. Relief of engorgement of internal organs is shown by profuse diaphoresis and diuresis with increase in the amount of solids in the urine. There is an increase in oxidation and elimination of toxic materials. The character of the pulse is changed. It is soft and more regular. Improved metabolism is soon shown by increase in physical and mental strength of the patient.

Dr. deKraft maintains that "moderate doses of high frequency current applied by the method of auto-conduction (general diathermy) will effect a reduction in blood pressure in all cases of simple hypertension."

This will be continued in our next issue under the heading "Diathermy in Hypertension."

□ □ □

Effect on Growth of Radiation with Mercury Vapor Quartz Lamp

It is shown by Goldblatt and Soames that young rats, if irradiated with the mercury vapor quartz lamp from the time they are put on a diet very deficient in fat soluble vitamin A grow more rapidly, reach a higher maximum weight, continue to grow for a longer period, and, finally, show a general condition better than that of control rats from the same litter receiving the same diet but no irradiation.

Similar differences between irradiated animals and controls were observed even in the case of a litter of rats brought up by a mother who was fed on the same deficient diet during the latter part of pregnancy and the entire period of lactation. It is apparent that irradiation with the mercury vapor quartz lamp cannot act as a substitute for the fat soluble growth promoting factor which is a necessary element of the diet.

Dr. T. Howard Plank, of Chicago, stated at Omaha recently—"Don't depend upon the Ultra-violet rays alone for every disease and case, because it will not 'cure' all your cases. I do not like that word 'cure.' If we arrest some of these things it is all that we can do. Many get well, and you may have a recurrence in six months or six years. Your patients get rid of their symptoms, their digestion is all right and they are happy.

Use everything else you know to be of any benefit to that particular type of case. There is no reason while using Ultra-violet rays to exclude any drugs you have ever used, because one does not interfere with the other."

He reports successful treatment of psoriasis, though every case will not yield to treatment. Abscess in osteomyelitis, mastoids refusing to heal after operation, erysipelas, old varicose ulcers, lupus and light tuberculous lesions are among the conditions and diseases that he has successfully treated with the ultra-violet rays. He also reports a case of stitch abscess following an appendectomy which was greatly helped by ultra-violet treatment.

He warns against using these rays upon boils until after drainage is established; after that they aid in the recovery. Pernicious anemia and hay fever while relieved to some extent, he does not regard as very amenable to ultra-violet treatment.

Drawing attention to the research work at Johns Hopkins which has proved that the ultra-violet rays are as efficacious in rickets as is codliver oil, Dr. Plank cites a case of anemia where the haemoglobin of 15% was brought up to 40% within thirty days, and the red cell count greatly increased, and he remarks that there is no doubt of the general systemic improvement under ultra-violet treatment.

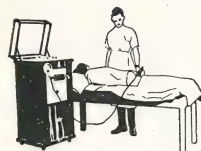
—Abs. Jour. Radiology.

□ □ □

There is no doubt about the supremacy of Fischer apparatus.

Physiotherapy From a Surgeon's Standpoint

By F. J. Cotton, M. D., Boston, Mass.



The rise of physiotherapy into the position of a recognized and acclaimed specialty has been so phenomenally rapid that there has been time only to progress and expand in the way of practical utilization of this special therapeutic activity or group of activities.

Now perhaps the time has come for taking stock.

Many of those who believe most thoroughly in the possible development of the specialty have lately realized more and more certain dangerous tendencies.

To be brief: they are

- (1) The tendency to overclaim.
- (2) The tendency to routine.

Not many years ago the field, such as it was, was in the hands of a few workers—specialists as a rule in one or another somewhat narrow special field—enthusiasts (as it is only right for a specialist to be) over the possibilities of his special medium—whether that was electricity or hydrotherapy or Swedish or other exercises.

They were in unfortunate competition—the best of them with untrained men and with fakers and up to the time of the great war progress was uneven and not too rapid.

With the great needs of the war and especially with the unification into one major specialty of all physiotherapeutic procedures, swift advance was possible.

Today we have a specialty of treatment by physical means—not surgical—including electro-therapy, hydro-therapy, thermo-therapy, massage, mechano-therapy, general and special exercise, etc.

The field and the demand for service have broadened immeasurably.

Today everyone recognizes the need of aid from the physiotherapist in almost every field.

But one hears criticism and it comes particularly from what we may call the business side in relation to the care of injuries, only a part of our field, but no unimportant part.

Today all over the country the man or woman who gets hurt at work receives compensation, and in effect he usually gets it from an insurance company until he can work.

Therefore, the company is violently interested in the time of his return to work and in many places and instances willing to pay for treatment that will shorten his disability.

But it is in part a matter of business with them.

And while the war has taught them the importance of physiotherapeutic means to aid recovery—yet they have been “stung” a good deal by offers to cure incurable cases and by the piling up of charges for routine work not very productive. And they are growing a little skeptical in spots.

We can tell them that they had better have cases examined before treatment and that frequent reviews of cases under routine baking and massage is at least wise.

But, the trouble lies deeper. It is that the physiotherapist himself, doesn't know as he should what he can promise—even in this class of cases alone—is apt to hope for too much, and later is very apt to overestimate results.

Now this gets nowhere, for no result is any good to the insurance company that doesn't mean recovery and ability to work—and he knows what he gets.

Outside these insurance cases—for the moment—how definite an understanding can the average physiotherapist give me, ignorant of detail, of what I had better do, to whom I had better send a case of joint stiffness after luxation, of myositis ossificans, of delayed fracture union, of traumatic arthritis, of osteoarthritis, of neuritis, of keloid scar, of scar contraction, of local muscle atrophy, of obesity with high blood pressure, etc.?

Physiotherapy, without clear pathological conceptions and without clear vision as to how a given procedure will act on a given pathology, and with what chance of success, is headed for trouble.

Routine application according to symptoms will not do.

And what of cases, not a few, that are treated for months, sometimes years, to relieve joint stiffness due to bony thickening or to wood-hard cicatrices?

They constitute an indictment.

What is the remedy?

First, work closer with the clinicians—men who are not close specialists, but are trained to pathological diagnosis, to impartial judging of results and progress, even their own. Second, more important: find out where we stand.

Get together a “fact-finding” committee—they are fashionable just now—a committee of clinicians acting with the broadest physiotherapists—working in a big hospital, and have them go over the field, treat cases and check results. It would take not months, but several years, but if we could in the end give a definite view of what physiotherapy can offer in a wide group of diseases and injuries and what particular sub-department of the specialty—if we could know that in one case diathermy, in another baths, in another X-rays, in a fourth muscle-training has so much to offer—it would be worth it.

If you do this, *don't* get the *big* clinicians. Get good ones who still have some time—well-trained men just below the service heads in a big hospital, let's say, for this is a proposition to do work and work that I believe eminently worth while.

—From the Journal of the New England Association for Physical Therapeutics

Special Announcement

As a result of repeated requests, due directly to the difficulty experienced by physicians in obtaining practical information from reliable sources in the efficient application of Electro-therapeutic measures, there will be a series of lectures and clinics held in Chicago, on October 15th to 19th inclusive, at the Logan Square Masonic Auditorium.

The following Physicians will participate:

Gustav Kolischer, M. D., G. U. Surgeon at the Michael-Reese and Mount Sinai Hospitals, Chicago, Illinois.

R. W. Fouts, M. D., Roentgenologist, the Lord Lister Hospital, Omaha Nebraska.

T. Howard Plank, M. D., Physiotherapist, the American Hospital, Chicago, Illinois.

Frederick H. Morse, M. D., Boston, Massachusetts, Ex-President the American Electrotherapeutic Association.

Curran Pope, M. D., Louisville, Kentucky.

Emile Du Val, M. D., Chicago, Illinois.

Frank M. Barns, M. D., Albion, Nebraska.

Roswell T. Pettit, M. D., Physician-in-charge at the Illinois Valley Hospital, Ottawa, Illinois.

H. I. Smith, M. D., Chicago, Illinois.

Ward P. Burdick, M. D., President St. Anthony Hospital Staff, Rockford, Illinois.

A. L. Yocum, Jr., M. D., Chariton, Iowa.

A number of other physicians skilled in physiotherapy technique have tentatively promised to be present and to give one or more lectures.

These meetings will be open to all physicians of standing. There will be no admission charge, and no obligation imposed by attending. All practitioners are equally welcome regardless of the types of equipment they may be using.

The complete program, instructive and enjoyable, has been arranged with a view to promoting greater efficiency in this field. It will be strictly informal, allowing the greatest freedom for questions and answers.

The Dates—October 15th to 19th, Inclusive
The Place—The Logan Square Masonic Auditorium
at the terminus of the Logan Square Metropolitan Elevated Line
CHICAGO, ILLINOIS

It is earnestly requested that registration be made at once, as, although the Auditorium facilities are almost unlimited, certain preparations must depend upon the number in attendance.

To be held under the auspices of H. G. Fischer & Company

Treatment of Lupus by the Diathermy Condensor Spark.

A. E. Milner (*Lancet*, December, 23, 1922) is convinced that this form of treatment does not fail to cure lupus vulgaris simplex and as this is the first stage of the catarrhal form, the importance of treating these cases early is apparent. The ideal patch for treatment is the small one; more extensive patches can be cured, but the treatment is tedious. This treatment is superior to scraping owing to the fact that the diathermy spark actually destroys the tubercle bacillus, whereas curettage leaves behind many tubercle bacilli in the vicinity of the wound. The cases of lupus that persisted were those with tuberculous affection of the mucous membrane either of the nose, gums, or lacrymal apparatus. The latter parts should be examined carefully, as otherwise reinfections are bound to occur. In butterfly lupus of the face, where the nasal mucosa is also affected, the nose should be treated first and cured as much as possible before commencing diathermy treatment of the face.

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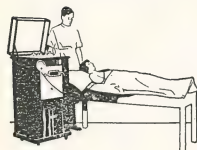
J. G. Putnam, M. D., of Everett, Wash., offers:

To facilitate the opening and closing of the patient's circuit without the aid of a foot switch, and yet without using the hand switch on the cabinet, procure a "pull chain" socket and mount it near the right-hand side of the cabinet. Connect the socket by a double cord to the foot switch binding posts.

Screw a fuse plug into this socket. Tie a piece of twine to the chain (sufficiently long to be convenient to the patient) and the patient can shut off the current if ever necessary for him to do so. The operator will often use this socket switch in preference to the regular hand switch.

Physiotherapy in the Medical Department of the United States Navy

By Erik G. Hankansson, M. D., Washington, D. C.



In the naval medical service, physiotherapy now includes massage, medical gymnastics, hydrotherapy, radiant heat and light therapy, actinic ray therapy and electrotherapy. In the term medical gymnastics are included all the methods of systematic exercises of the motor apparatus for therapeutic purposes. Both the manual and the mechanical methods are used. Games and sport and occupational therapy are also utilized. In hydrotherapy, applications of practical nature and known effect are used, such as the ablution, the sheet-bath and the cold friction bath, the cold pack and the continuous bath, the circular douche, the jet and fan douche, whirlpool baths and fomentations. Radiant heat and light are applied by means of different types of incandescent lamps and by electric light bath cabinets. For actinic ray therapy, the mercury vapor quartz lamps and other arc lamps are utilized. Direct sunlight is also used. In electrotherapy use is made of the galvanic, faradic and sinusoidal currents and the various modalities of the high frequency current and static electricity.

In the latter part of 1919, a separate department for physiotherapy was established at the Naval Hospital, Brooklyn. A complete equipment was acquired. Navy nurses and hospital corpsmen were trained as operators and a high standard of skill was soon attained. The hospital staff found physiotherapy a valuable aid in the treatment of a great variety of injuries and diseases and utilized it to its full capacity. During the three years and a half that it now has been working, the change from wartime to peace time conditions has occurred and an entirely new set of officers and nurses has succeeded the staff under which the physio-

therapy department evolved. It is significant to note that the department still has practically the same extent of usefulness. This bears out the assumption heard from various sources nowadays that the utility of physiotherapy is not restricted to the functional restoration of maimed victims of war injuries, but that it should be regarded as a fundamental branch of medical and surgical treatment in time of peace as well.

The Bureau of Medicine and Surgery is now realizing a plan to place physiotherapy at the command of all naval hospitals. Three naval hospitals, besides the Naval Hospital, Brooklyn, have now physiotherapy departments in commission, and within the next six months five additional hospitals will be equipped and provided with trained personnel for this method of treatment.

The Navy does not employ reconstruction aides as operators in physiotherapy, but trains its own personnel, nurses and hospital corpsmen, for this purpose. This training is carried out at the Naval Hospital, Washington, D. C., where a physiotherapy department, with special advantages for training of personnel has been organized. The minimum time for the course of instruction is four months. The aim of this training of the nurses is to make them skillful technicians capable of intelligent application of physiotherapeutic measures, at the direction of medical officers. The hospital corpsmen are expected to meet these requirements only in hydrotherapy. Their training in the other methods of physiotherapy is considered satisfactory when they can work as reliable assistants to the nurses.

Physiotherapy has also been placed on the curriculum of the Naval Medical School. The course includes eight lectures with clinical demonstrations and eight hours of practical work. The training of the personnel and the instruction at the Naval Medical School are in charge of medical

officers who have had special experience in physiotherapy, and who have been afforded ample opportunities for study. Through this system of instruction, the peace time Navy will soon have most of its medical officers familiar with the principles and indications of physiotherapy and a number of medical officers will have special knowledge of the subject and considerable experience in the training of operators. Furthermore, there will be many nurses particularly skilled in the application of the various modalities of physiotherapy, and a considerable number of hospital corpsmen sufficiently trained to work satisfactorily under supervision. It is obvious that these conditions will permit of a quick and easily accomplished expansion in case of a war emergency. By merely placing the above mentioned medical officers in charge of the various physiotherapy departments, each naval hospital can be made a training unit capable of supplying its own needs in physiotherapy personnel. With trained personnel available, the problem of expansion is practically solved. Other necessities, such as additional space and more equipment would be less urgent, since, undoubtedly, the skillful human hand working intelligently is the most important instrument.

—*New York Medical Journal*, Aug. 4, 1923

□ □ □

There is nothing in physical therapeutics that the regular physician need apologize for, but the most of us should apologize for being ignorant of the possibilities of measures other than drugs in favorably influencing the many distressing conditions which afflict mankind.

□ □ □

There is no other means at the command of the physician so potent in correcting deranged metabolism as the high-frequency current.

Thermotherapy.—B. S. Price (*American Journal of Electrotherapeutics and Radiology*, January, 1922) summarizes as follows:

1. The unnecessary confusion existing with regard to the recognized distinguishing features and indications of the different forms of thermotherapy should be corrected as much unnecessary harm results from it. At the same time many lives are being destroyed through the lack of fulfillment of the possibilities.
2. Careless nomenclature used in the expression of the various forms of thermotherapy indicates its haphazard use and in the minds of many a confused and unrecognized conception of the distinguishing features. Heat brings about opposite results under different conditions, therefore definition is necessary. Human bakes do not exist in civilized communities.
3. The present degree of knowledge with regard to thermotherapy largely limits its application in therapeutics to the effects produced from the accompanying qualities of the modality rather than from the production of heat within the tissues except in the case of diathermy. Heat obtained from such active sources as radiation and electrical currents is accompanied in its effects by those of molecular massage and under high temperature, the initial stimulation more rapidly passes into depression than in the case of convective heat of high degree.
4. The different forms of thermotherapy, largely dependent upon their associated features, fill wholly different indications. Further, the results obtained vary widely even to the degree of antagonism dependent upon sudden exposure to high temperature or prolonged exposure to a low temperature and upon the mental and physical condition under which the patient is placed.
5. The significance of catabolic elimination requires more conscientious study than is generally recognized.

6. The oven bath properly given is a cellular waste eliminant and as such fills an entirely different indication from any other form of heat. It would seem to act mainly through the adrenosympathetic system. Oven bath stimulation is distinctly chemical in its last analysis of elimination and in no sense one of perspiration. Whereas other forms of heat may have a more marked influence upon metabolism under certain conditions, never do they markedly influence elimination. The oven bath is indicated wherever there is subelimination of toxic matters from the tissues, whether in the course of protein metabolism, as in nephritis, certain types of neuritis, rheumatism, etc., or in acidosis or other toxic conditions. It is also a valuable circulatory stimulant in these cases.
7. Cardiac incompetency is not a contraindication to the oven bath properly given.
8. In the use of superheated dry air as with other methods of modifying the circulation, it is important to maintain the circulatory changes thus produced until restored by Nature. Hence, the horizontal position is essential, and air cooling, as well as water cooling under improper temperatures must be avoided. Air cooling is impossible of regulation. Water regulation is possible.
9. The state of abeyance under which the cardio-vascular control is placed for a few hours as a result of the oven bath is followed by marked improvement in its tone over that preceding the treatment. This is evidenced by functional hypotension cases.
10. There is necessity for discrimination and proper combination of measures in this as in all forms of therapy.

□ □ □

A man is not an electrotherapist just because he can replace a spark plug.

□ □ □

Quinine will often cure malaria; diathermy will just as often abort a pneumonia.

A PAGE OF FUN

A negro who had an injured head entered a doctor's office.

"Hello, Sam! Got cut again, I see."

"Yes, sah; I done got carved up with a razor, Doc."

"Why don't you keep out of bad company?" said the physician, after he had dressed the wound.

" 'Deed I'd like to, Doc, but I ain't got 'nuff money to git a divorce."



□ □ □

Another Ford Story.

Pa: "I've bought a new tin rattler for the baby."

Ma: "Why, John, it will be at least fifteen years before he will be able to drive a car!"

□ □ □

Literal Tom.

Tommie came to a word he couldn't pronounce during his reading lesson.

"Barque," said the teacher.

Tom looked sheepishly around the room.

"Barque, Tommie!" exclaimed the teacher sharply.

"Bow-wow-wow!" cried Tommy, completely dumbfounded.

□ □ □

Slow.

Jack: "Haden't you better put something around you?"

Sylvia: "Haden't you?"—Life.

You Can Believe This One.

An alligator known to have opened its mouth but once a month has just died in Scotland. The natives have already entered bids for purses to be made from its hide.

□ □ □

Needed Cheering Up.

"You sold me a car about two weeks ago."

"So I did," replied the automobile salesman. "How do you like it?"

"That's just the point. I want you to tell me everything you said about that car all over again. I'm getting discouraged."—Birmingham Age-Herald.

□ □ □

A Doctor With a Bay Window.

Says a small advertisement: "To let, four rooms and bath, complete housekeeping apart, suitable for physician with two large store-rooms." It might likewise appeal to some doctor with a bay window.—Judge.

THEY WRONG OPPORTUNITY
WHO SAY SHE KNOCKS
BUT ONCE.

FISCHER'S MAGAZINE



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349

OCTOBER, 1923

**THE MORE YOU KNOW,
THE MORE YOU KNOW
YOU OUGHT TO KNOW.**

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. II

OCTOBER, 1923

No. 1



This is the First Anniversary of Fischer's Magazine

A fine, robust, healthy chap for only one year
of existence—don't you think so?

Well, just watch him grow!

He will continue to be fed on only the best,
his habits are quite regular, and we fully
intend that he be kept in the pink of con-
dition.

On just what kind of diet do you think he
would thrive best?

IN PREPARATION
DIATHERMY
 & ITS APPLICATION TO
PNEUMONIA

BY

HARRY EATON STEWART, M.D.

Attending Specialist in Physiotherapy, U. S. Marine Hospitals, N. Y.;
 Consultant in Physiotherapy, U.S.V.B. Hospital, New Haven, Conn.;
 Director, New Haven School of Physiotherapy; Formerly Assistant
 Director, Section of Physiotherapy, Office of the Surgeon
 General, U. S. Army, and Supervisor of Physiotherapy,
 Bureau of U. S. Public Health Service, Washington;
 Author "Physical Reconstruction and Orthopedics"

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PUBLISHER'S NOTE

The author has had two years' experience in the treatment of pneumonia with diathermy in U. S. Marine Hospital, No. 21 (Staten Island), where every case was checked up by the full clinical and laboratory findings of the staff. The results obtained were as startling as they were gratifying.

In the Introduction Dr. Stewart acknowledges that the results obtained by some of his co-workers have surpassed his own. This would seem to indicate that the profession in general should duplicate or better the results reported.

The author insists that "hit or miss methods will not obtain good results in this work any more than they will in any other therapy or surgery." He has therefore written an unusually clear, but at the same time condensed, description of the physics, physiological effects and therapeutic indications of both medical and surgical diathermy. Technique is described with unusual clarity.

Particular emphasis is laid on the fact that diathermy properly applied is harmless under all conditions and that it brings almost invariable symptomatic relief. Above all *it has apparently lowered the general average mortality*. This lessened death rate was particularly evident in a carefully worked out comparison with a group of controls under conditions identical in every respect, except in the use of diathermy.

A large number of detailed case reports giving all the clinical and laboratory findings—the most conclusive evidence that a scientist can offer—are given in this book.

Practically every aide, nurse and physician who has actually seen the treatment *properly* given has expressed faith in diathermy as a therapeutic adjunct of distinct value in pneumonia.

The book will be profusely illustrated, well printed and well bound.

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The Treatment of Calcified Subdeltoid (Subacromial) Bursitis by Diathermy

(Abstracted Journal A. M. A., July 14th, 1923)

Dr. Joseph F. Harris, M. D., Associate Physical Therapist, Mount Sinai Hospital, New York City, advises that in the majority of these cases the diagnosis is confirmed by the Roentgen ray, and that Diathermy is, without doubt, the most valuable treatment indicated * * *

* * * It is a proved fact that the maximum intensity of heat is always developed half way between the two plates, and it is due to this that deposits such as occur in Bursitis can be readily attacked. Diathermy really creates a noninflammatory reaction in the affected part, and it is due to this physiologic action that absorption of foreign substances takes place.

Dr. Harris advises that the electrical plates be placed anteriorly and posteriorly on the shoulder, and that care should be taken that the affected bursa lies directly between; that experience has shown that 500 to 700 milliamperes of current should be employed; that the first treatment should last 15 minutes, and increased daily until one-half hour's time can be given. He also advises that if the patient is suffering severely treatments should be given every day for a week, and then on alternate days. His case reports, which follow, are very interesting.

REPORT OF CASES

CASE 1.—Mrs. M. F., aged 43, for eight weeks had suffered continuous pain and was unable to raise her arm from her side. A roentgenogram showed a calcification, under the right subdeltoid bursa, which measured 1 inch in length and one-half inch at its greatest width. At the beginning of this trouble, all abscessed teeth had been removed. She received, in all, fourteen treatments, one every other day, and at the end of that period the pain had disappeared and the motion of the arm was normal. I have been able to keep track of this patient for two years, and at no time has she complained of shoulder disability.

CASE 2.—H. A. S., a man, aged 36, complained of occasional pain and slight disability only when doing certain acts, such as removing his hat or tying his tie. In this case roentgenograms confirmed the diagnosis by showing a small deposit in the right shoulder subacromially. This measured about one-fourth inch in length. At the end of fifteen treatments all the symptoms had entirely disappeared. Two months after, the patient returned for more treatment, having put excessive strain on his right arm. Owing to the irritated condition of his shoulder, it was necessary for me to give him twenty-five more treatments, but he has been free from all symptoms for over a year. In all fairness, I want to state, with reference to this case, that the average person would not pay much attention to the symptoms presented during his last course of treatment, but this man, being highly neurotic, was quite prone to exaggerate the slightest twinge.

CASE 3.—H. B., a man, aged 74, was unable to dress himself, owing to pain and inability to move his shoulder. The case presented the usual symptoms and roentgen-ray findings. Before the roentgenograms were taken, the patient had been treated for arthritis. He received a daily treatment for seven consecutive days, and then was able to go to his home in the South, with no pain and no shoulder disability.

CASE 4.—Mrs. M. S., aged 53, came for treatment after having been treated in the hospital for three days, with the arm in abduction. The roentgenograms revealed a deposit subacromially in the right shoulder. Pain was a constant symptom, as well as partial limitation in the shoulder joint. The patient required twenty treatments, but at the end of that time she had the full use of her shoulder joint and was free from pain.

CASE 5.—F. F. S., a man, aged 42, was carrying his right arm in a sling and was suffering so acutely that it was necessary to undress and dress him, when I first saw him. The findings were of the usual type. The patient received seven consecutive treatments. After the first three, he was able to sleep at night without the use of drugs, and at the end of seven treatments, all symptoms had disappeared.

CASE 6.—H. H., a man, aged 38, was found, by means of the roentgen rays, to have deposits in both shoulders nearly the size of a robin's egg, an unusual condition. Surgical intervention had been advised, since he was unable to raise either arm from the side. Owing to the stress of business affairs, he could not take

the time necessary for the operation. He received on each shoulder twenty-one treatments and, at the end of that period, he was able to raise both arms to the level of his shoulders. As his main purpose was to evade operative procedure, he discontinued treatment at this stage, evidently being satisfied with this improvement.

Observations of results indicate that when employing this method of treating Subacromial Bursitis about 80 per cent of the patients recover, and that the remaining 20 per cent either discontinue treatment or are not helped. The treatment is not painful, and as in most instances the patients have been advised to have this calcification removed surgically, it is readily seen that Diathermy is to be tried first.

Diathermy in Hypotension

By Elnora C. Folkmar, M. D., Washington, D. C.

There is a class of cases that gives the physician even more trouble than the high blood pressure cases. These complain of chilly feelings, have cold hands and feet, no appetite, insomnia, mental depression, no energy, lack of physical strength. They have low blood pressure and subnormal temperature. For these cases diathermy is a very rational treatment, per se, or as an adjuvant to endocrine, diet, or drug therapy. Diathermy gives the thermogenic mechanism a rest, by supplying the heat which the body cannot produce, and thus permits it to resume normal functioning. Daily treatments of fifteen minutes to one-half hour should be given on the condenser chair or pad. Use 500 to 800 milliamperes of current. At first, special care must be taken not to give too vigorous a treatment or the patient may faint. The oral temperature should be taken before and again after treatment. There should be an increase of .5 to 1.5 degrees. When the patient retains the increase in temperature until the next day, treatments may be given on alternate days.

Some Uses for Diathermia

C. S. King, M. D., Washington, D. C.

The chief use of Diathermia is in deep-seated conditions as distinguished from superficial ones. These conditions are such as joint affections, bronchitis, pneumonia and tuberculosis (both pulmonary and laryngeal). It is also useful in absorbing scar tissue, such as over deposit of bone scar after a fracture. In such cases, however, it must be used with caution, as in one of my cases, in a delayed union, we over-treated and absorbed some needed scar tissue that had been deposited.

While we are on the subject of bone tissue it is well to suggest that a number of mild treatments, say of 10 minutes at 300 to 600 milliamperes, according to the thickness of the section of body treated, is stimulating to the formation of normal tissue; while a long, heavy treatment such as one hour at from 600 to 1500 milliamperes tends to absorb tissue and to sterilize, as is needed in pneumonia, bronchitis, tuberculosis, adhesions, etc.

If you will get firmly fixed in your mind that Diathermia is relaxing, deeply sterilizing and absorbent in effect, while the monopolar or Oudin is stimulating and superficially sterilizing and absorbent, you will have a clear-cut indication for each modality from your high frequency apparatus.

For instance, if you are treating a cold in the head, or a muscular lameness, or a recent injury, the monopolar (Oudin) current is the desirable one. It is wonderful how much it helps take out the soreness from a sprain as in the ankle or the knee, or the back, or an intercostal rheumatism; but, if you have a joint injury, or a congestion or inflammation deep within the body, in the intestines or in the pelvis, Diathermia is indicated.

The more severe and acute the condition, the longer should be the treatment—say one hour, as in bronchitis, pneumonia or in pelvic cellulitis. In tuberculosis, however, use about

a half hour's treatment daily or every other day, as the case improves. Cod Liver Oil should always be given with tubercular conditions as it supplies the greatest amount of fat-soluble vitamins available from any fat, and rebuilds lung tissue. I use Scott's Emulsion as the more agreeable form, but pure Norwegian Cod Liver Oil is better if it is tolerated by the patient.

If you have not the actinic rays available, as furnished by the air-cooled mercury vapor lamp, it is well to use a 1000 watt or 1500 watt lamp in connection with your tuberculosis cases. Follow the Diathermia with a gentle vibratory treatment over the same area lasting about 7 minutes—2 minutes over front of chest and 5 minutes over back of chest and on down the spine, avoiding the spinous processes. In acute cases treat two or three times daily. In chronic cases daily or every other day.

If there is persistent pricking under the pads in Diathermia, it means either that the metal plate has not been smoothly applied to the skin, or that there are breaks or poor connections in the cords or in the machine. Care should be taken that there are no sharp points, as on the edges, touching the patient, otherwise there will be a persistent pricking effect. There should be no sensation except that of a gentle warmth (and that more of a body warmth than surface) while taking Diathermia.

Patients are apt to drowse off, as the treatment is relaxing and comforting; also, as they usually perspire, they must be protected by covering and wiping off vigorously following the treatment.

I always tie a stout cord to the switch that breaks the current, and have my patient hold this string. If anything happens to cause a burning or biting sensation from the Diathermia, due to a broken contact somewhere, the patient can open the switch immediately and not wait for help. Otherwise there might be a skin burn that leaves an unpleasant memory. Diathermia is the most powerful treatment we

use in the office, and at the same time it gives the least trouble and sensation when properly applied.

Do not be misled by anyone telling you to employ *wet felt pads* for Diathermia. Never use anything but *bare metal material, preferably mesh*. I buy in ten-pound lots. The Flexible Mesh material and Pads as made by H. G. Fischer & Co. are excellent. The objection to the use of a wet felt pad is that the heat of the Diathermia treatment causes steam to form which is apt to burn your patient at the surface, which is in itself an entirely different treatment from the deep action of the Diathermia as has been described in the foregoing.

Also, if the treatment is long continued, these wet pads dry out in spots, which causes the current to concentrate in what wet areas remain, and burning will again result. It is extremely bad technic to use wet felt pads, and I have protested to the manufacturers against permitting their agents to recommend them. All experts in Diathermia will confirm this recommendation of the use of bare metal plates. The plates and the patient's skin must always be well moistened with warm soap lather.

Major C. M. Sampson, M. D., formerly of the U. S. Army and later of the U. S. Public Health Service, but recently resigned from government service, has written a splendid book on Electro-physiotherapy subjects. You should get one of these books, entitled "Physiotherapy Technic." Major Sampson has probably treated a larger number of patients by these methods than has any other person. As many as 50,000 to 60,000 each month were treated in his clinic at Fox Hills, Staten Island, N. Y., where he was stationed during the war and after in the reconstruction period.

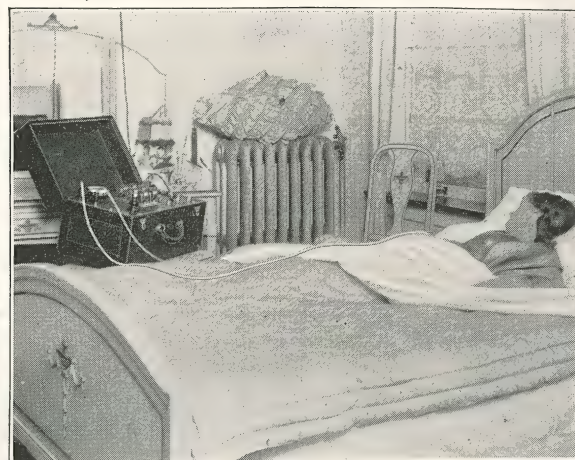
DR. HARRY EATON STEWART, of New Haven, Connecticut, says, in concluding a very interesting paper on the treatment of Pneumonia with the Diathermy Current in which he recounted a number of case reports:

"In several of the cases the Diathermy was not instituted until in favorable cases the temperature might be expected to start downward, but it is the opinion of the medical staff at the U. S. Marine Hospital No. 21, New York City, who selected these as test cases, that Diathermy helped in their recovery.

"When we have had many more cases to report on, we hope to be able to make a more definite statement, but this much we do know—that in *every single case* and in almost *every single treatment* the temporary effect upon the patients was remarkable. Cyanosis disappeared. The expiratory grunt when present was remarkably lessened or stopped entirely. Respirations were less labored and the patient received from two to four hours of very marked relief, in many cases obtaining some sleep.

"Now Diathermy has been ordered as soon as the diagnosis is made in every case of Pneumonia at the Marine Hospital. It is not too much to assume that in many critical cases this marked relief of symptoms may be the turning point in disease.

"Under proper technic there is no danger of ill effects from two or even three Diathermy treatments per day. The proper technic is of the greatest importance. The fall of temperature takes place by lysis where Diathermy is used. Pneumonia attacks all ages, and the rugged as well as the weak. The death rate is so high that any method of treatment which will lessen it to any extent is invaluable. *The results of this work are sufficiently encouraging to justify the wider employment of Diathermy in this disease.*"



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Simple — Convenient — Effective

It is truly PORTABLE—weighs only 50 pounds.

EFFICIENT—4000 Milliampères available.

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Correct Auto-Condensation Technic

In response to a question on the subject, our good friend Dr. Burton B. Grover, of Colorado Springs, advises:

"While many methods have been advocated for employing the D'Arsonval Auto-Condensation current for the reduction of high blood pressure, the correct procedure is—Patient on either couch or chair pad, reclining if possible; metal handle held firmly in both hands; pass from 300 to 500 milliamperes for 13 to 15 minutes.

"The dose should never exceed 700 millis at any time when given to reduce blood pressure. With metal handle in the hands the blood is heated gradually and the effects are more lasting. Just who introduced the method of placing a large electrode on the chest, abdomen, or both in Auto-condensation, I cannot say, but frankly I do not approve. The electrode in this position does not administer Auto-condensation at all; it is indirect Diathermy, and is advisable in cases of bronchitis, etc.

"When a kidney is to be treated, one electrode should be placed over the kidney, the other on the abdomen directly opposite. There is no excuse for treating a kidney by the indirect method; it should always be treated *directly*. The blood pressure reduction is one of the incidents to this method.

"High milliamperage is undesirable in Auto-condensation, but generally of extreme importance in Diathermy. I see no good reason for hands and feet being connected, with the auto pad as the other terminal. However, I see no objection. Hand-and-foot Diathermy is desirable in some cases for its effects upon general metabolism.

"Always advise the neophyte to never exceed 700 milliamperes in Auto-condensation treatments. Large doses will do more harm than good, and throw a monkey-wrench into a perfectly good therapeutic measure.

"I have administered thousands of Auto-condensation treatments, and have learned the advantages as well as the follies of this end of the High Frequency game."

Visceral Adhesions

Frederick M. Morse, M. D., Boston, Massachusetts

Visceral adhesions arise from so many different causes that the etiology must always be considered before any intelligent procedure should be undertaken for relief.

Adhesions following surgery about the duodenum, gall bladder, and appendix regions, where a purulent condition existed previously, is usually to be preceded and followed by post-inflammatory fixed areas where surgery perhaps offers the only solution.

Many apparent adhesive conditions that are diagnosed by tenderness, pain, and X-ray diagnosis at abnormal angles and distentions about the hepatic, splenic, and sigmoid flexures of the colon are often elusive.

In lieu of a Wasserman test, the iodides and mercurials are often given to establish a diagnosis. Likewise, mechanical gymnastics intelligently applied often changes an apparent surgical case into a non-surgical case, which might apply to the stomach, duodenum and colon more especially.

Adhesions following plastic peritonitis is a regenerative process and is often followed by the formation of firm adhesions which in time may disappear. Electrical and mechanical treatment in these cases usually hasten recovery.

The process that may be instituted with safety where there is no purulent area intervening is the application of diathermy directly through the part under consideration, or mild currents of galvanism followed by wave current effects with an alternating current. This latter procedure increases cell activity and favors elimination of retained infiltrations.

The reversing of the galvanic current as may be done by the sinusoidal apparatus would, in the opinion of the writer, often result in exhausting the vitality of the parts that we hoped to regenerate.

The Proper Application of Mesh Diathermy Electrodes

Questions received in our daily mails indicate, both from the quantity as well as the nature of the contents, that an article pertaining to the proper method of applying *Mesh* electrodes is quite in order.

There are two distinct methods of applying both the mesh and block tin electrodes when employing Diathermy—the *plate* method and the *cuff* method.

For all flat surfaces, as for example on the trunk, the plate method will be found most convenient and adaptable. Coat the skin and the under (smooth) side of the mesh with warm soap lather. Place the mesh perfectly flat on the skin, with no wrinkles or high spots, and retain in place with a flexible, half-filled sand-bag.

Do not use a sand-bag of the heavy, bulky, thick variety that will slide off at the first move of your patient, but one carefully designed for the purpose. This is made of a strip of heavy cloth or light canvas about 10 inches wide by 20 inches long, folded over lengthwise to form a bag 5 x 20 inches. Sew cross seams 5 inches from each end to form two pockets, each 5 inches square. Use only sufficient sand to half fill these two pockets, leaving the center strip flat. When this bag is placed over your patient the flat part only bears on the electrode—the weights hang down at the sides. The weight of the patient will hold the under electrode in place, and the half-filled sand-bag is laid over the upper electrode. Slip one of the small connectors on the tip at the end of the rubber covered cable, and place this connector between the mesh and the sand-bag. No fastening is required either underneath or on top.

The cuff method, however, should always be employed when treating a joint, such as the knee or elbow. Use two pieces of mesh 3 inches wide and sufficiently long to pass all around the limb with a slight overlap. Coat the skin and the

under (smooth) side of the mesh with warm soap lather. Place one cuff five inches below the joint and the other five inches above. Hold these cuffs in place with two turns of a good elastic bandage, tucking the end under the first layer to prevent unwinding.

Bind sufficiently tight to prevent slipping, but always make allowance for the natural swelling of the part under the Diathermy heating to prevent any restriction. Pass your finger between the mesh and the bandage and insert the connector which in turn is fastened to the end of the rubber covered cable. This makes perfect contact and will not slip.

Dr. Gustav Kolischer—Again

Brief, But to the Point, as Usual

Diathermy is practicable in all instances in which heat produced within the tissues of the human body appears to be desirable as a therapeutic factor.

This item of generating the heat within the tissues is the paramount advantage of Diathermy over any other method. Heat applied to the surface of the body by means of a hot water bag or an electric pad penetrates to a very limited depth only, and cannot be regulated.

With the help of Diathermy we are in a position to administer heat wherever it is desirable, and to any area—superficially or to any desired depth. The degree of heat produced may be gauged and regulated within any limits desired.

To distinguish between Medical and Surgical Diathermy, the former term applies to any heating within physiological limits while the latter is applied to destructive heating, for desiccating structures—as tumors.

Medical Diathermy is used to advantage in all instances where absorption is intended, or where localized increase of the blood supply is desired. Therefore, Diathermy is used

for the treatment of all exudates; for instance, in arthritis, pleurisy, pneumonic infiltrations, indolent parametric exudates, and in chronic prostatitis and vesiculitis.

For destruction of superficial benign growths the Surgical Diathermy is used in the form of Fulguration; that is, using the Electric Spark.

More substantially, malignant tumors are desiccated (or coagulated) by the use of larger stamp-shaped electrodes that are brought in intimate contact with the growth. One may either catch the tumor between the two active metallic electrodes, sending the current directly through in various diameters, or apply an inert large electrode somewhere on the surface of the body and press the active electrode upon the growth to be coagulated. Here again the superiority of Diathermy, by virtue of the possibility of exactly gauging the extent of destruction, and by the orderly procedure of the whole manipulation; the degree of penetration being entirely under control.

Technic of Diathermy and Indication for Its Use

R. Grunbaum (Wiener klinische Wochenschrift, January 11, 1923) has improved his technic of diathermy therapy of chilblains to such an extent, that he uses this treatment even in the severest cases of frostbites. For example, have the patient place the tips of his toes in running water and apply the other electrode to both thighs, with the result that the current flows from the tips of the toes through the entire leg and thus affects a large vascular area. In addition to frostbites a suitable field of diathermy treatment are the diseases of the accessory nasal sinuses, cicatricial bands and abdominal adhesions; also chronic parametritis and perimetritis.

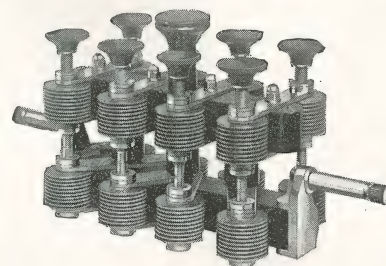
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Constructed solidly, of durable materials, this new Spark Gap will give no trouble whatever. It is distinctly different from anything else ever constructed for the purpose.

The "Kolischer" Gap will fit the supports of any Fischer or Thompson-Plaster Styles "F" and "FO" machines, as well as the Types "L," "LO" and "Military" without alterations or other attachments.



The illustration tells the rest of the story, and one such gap on your machine will be a revelation to the operator. And the price is reasonable.

Catalog No. 1222—Complete "Kolischer" Gap—price \$75.00

A PAGE OF FUN



Young Bride (timidly): "Eh—I'm not joking—eh—I mean I really want to buy some—quite seriously—eh—might I ask if you have any bananas?"

□ □ □

Young Wife—The postoffices are very careless sometimes, don't you think?

Friend—Why do you think so?

Young Wife—Fred sent me a note yesterday from Philadelphia where he is stopping on business, and the silly postoffice people put an Atlantic City mark on the envelope.

□ □ □

The melancholy days are here,
And there's a darn good reason;
The overcoat I wore last year
Won't stand another season.

□ □ □

"Ma, if the baby was to eat tadpoles, would it give him a big bass voice like a frog?"

"Good gracious, no! They'd kill him."

"Well, they didn't."

Little Sally—"When I get to be mamma, will I have a husband like papa?"

Mother—"Yes, dear."

Little Sally—"And if I do not get married, will I be an old maid like Aunt Kate?"

Mother—"Well, I guess so, honey."

Little Sally—"Well, I guess I am in a fix, mamma."

□ □ □

Young Brown, who had been married but a few days, sought out his friend, Jones, who was a family man of long experience, for a little advice.

"Jim," said Brown, "what did you call your mother-in-law after you got married?"

"Well, I'll tell you," replied Jones, "for the first year I addressed her as 'Say,' and after that we all called her 'Grandma'."—Judge.

**THE PRACTICAL MAN KNOWS HOW—
THE SCIENTIFIC MAN KNOWS WHY—
THE SUCCESSFUL MAN KNOWS BOTH.**

FISCHER'S MAGAZINE

DECEMBER
1923

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THE SUCCESSFUL MAN
DOESN'T MEET CIRCUMSTANCES—
HE MAKES THEM.

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. II

DECEMBER, 1923

No. 3

Christmas emphasizes many
truths to all of us

True friendship is one of the world's
richest blessings. Kindness melts away
frowns, scowls, worries, hard feelings.
Real happiness comes through making
others happy.

It gives us great pleasure to extend to
you, doctor, our choicest good wishes
this Christmas period.

May every minute of the day fairly tingle
with good cheer.

H. G. Fischer & Co.

DOCTOR—are you interested

In new and approved Physiotherapeutic technic?
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 In practical Physiotherapy demonstrations?
 In learning of new developments each month?
 In learning how to get the best of returns from your equipment?

? ? ? ? ? ? ?

The second Wednesday of each month hereafter will be set aside at the Fischer Plant for demonstration and clinic purposes.

This is being done as a result of numerous suggestions from our readers and we feel sure there will be a hearty response. You are welcome any day—every day—come when you can—but this one day each month is to be "Physician's Day." You will be assured of hearing at least one good talk, seeing several demonstrations, clinics when possible and advisable, and a program of interesting events throughout the day.

Help us—come in if you can, or send us some of those questions that come up so often and let's thrash them out at these meetings. The answers, when of sufficient import, will be published in these pages and all interested may benefit therefrom.

Individual subjects will be assigned to certain physicians and proper announcement made in these columns regarding the coming month's program.

Now Doctor—don't leave everything to the next fellow—let us have YOUR opinion. How does this suggestion strike YOU? ?

Instructive Successful Results in Fourteen Successive Cases of Pneumonia Treated with Diathermy

**Marked Relief from Cyanosis and Painful, Labored
 Breathing Immediately Following Treatment**

Does Not Interfere with Other Lines of Treatment

By HENRY V. BROESER, M. D.
 105 Newark Street, Hoboken, N. J.

Decongesting the Congested Lung

In the treatment of pneumonia we aim to decongest the congested lung by counter irritation, cupping, application of heat to the chest and the like. There is no reason why diathermy should not accomplish as much as Dr. Broeser claims, and more. This is shown by the series of instructive cases presented in this interesting paper.—Eds.

DIATHERMY is a form of physical therapy in which the generation of so-called internal heat is utilized. When a rapidly alternating current of electricity (high frequency) is conducted through resisting tissues, heat is generated along the path of conduction in proportion to the strength of the current and the resistance of the tissues. The current of electricity changes its direction so rapidly that excitable tissues are not stimulated nor does ionization or electrolysis occur. This form of heat because it originates within the tissues and is not brought from without as in the application of heated objects or thermic lights is called internal heat or diathermy.

The rationale of the use of diathermy in disease depends upon the well-known fact that any measure which supplies heat to a part or raises the temperature en masse will cause

a dilatation of the capillaries with resulting hyperæmia; increased cell nutrition and acceleration of the chemical reactions constituting the cell metabolism of the part and hence increase the "locales resistiones" which will also allow for a more rapid drainage from that part.

High Frequency Treatment in Medicine— Surgery—Pneumonia

The use of high frequency currents in medicine was first suggested by "Nikola Tesla" in a paper in the *Electrical Engineer*, December, 1891. The physiologic properties of these currents were investigated in a series of researches by D'Arsonval in 1898. In Sept., 1907, Nagelschmidt, a Berlin physician in Dresden, stated that high frequency currents caused a "heating through" of the tissues and recommended their use in the treatment of joint and circulatory diseases. Since then there has appeared a considerable literature on the use of high frequency in medicine and surgery. Little attention was paid to the reports of its use in pneumonia, since for the most part they were deficient in laboratory, clinical and X-ray data to make the records convincing. In October, 1922, Dr. H. E. Stewart, of the U. S. Public Health Service, reported a series of ten cases of pneumonia occurring in the U. S. Marine Hosp. No. 21, New York, in which diathermy was employed. All the patients except one recovered by lysis. The single fatality was a case of bilateral pneumonia, empyema and streptococcic septicemia.

The writer does not wish to imply that in diathermy there is a specific for pneumonia, the following is merely a record of his experience with this therapeutic agent in fourteen successive cases of pneumonia. These cases were taken from his consulting practice as Roentgenologist and Physiotherapist to St. Mary's Hosp., Hoboken, N. J., St. Francis Hosp., Jersey City, and North Hudson Hosp., at Weehawken, N. J. The physical findings and diagnosis in each case was made by the physician in charge who prescribed medical treatment in conjunction with the diathermy which was

administered by the writer. Radiographs were taken in the beginning and in the course of the treatment to determine the influence if any, on the rate of resolution of the consolidated lung.

Summary of Procedure

Flexible electrodes, 4x7 inches composed of blocked tin gauge 22, are placed one anteriorly right, the other posteriorly left, over the part of the chest corresponding to the pneumonic lung. A hot shaving soap lather is applied to the electrodes and the skin. A bed sheet folded one foot wide placed around the chest supports the electrodes. Under the posterior one a small cushion is placed to allow more comfort to the patient. The machine used is of the portable type capable of registering 4,000 M.A. of current. The current is slowly turned on until the maximum M.A. is reached, allowing about four to five minutes for this procedure. By the maximum is meant the strongest current the patient will tolerate, usually between 1,500 and 2,000 M.A. For 20 minutes the current flows, then it is gradually reduced to zero, allowing three minutes for this procedure. *Best results are followed by the early morning treatment.*

Case Presentation

1. Case of Dr. Pyle and Dr. Kerdasha, St. Francis Hosp. C. B., male, white, 39 years, laborer.

Past History: Pneumonia at the ages of 20 and 32, no sequelæ.

Present Illness: On March 22, patient was seized with a pain in the left side, chill, sweats, headache, cough and shortness of breath.

Physical Exam.: Nutrition of patient very poor, marked cyanosis, lower left chest shows dullness, increased tactile and vocal fremitus, rales and bronchial breathing with pectoriloquy. Temp., 104; pulse, 120; resp., 40; blood pressure, 106-40.

Lab.: W. B. C. 14,000 Type Pneumonia IV.

X-Ray: Lower left lobe is dense and cloudy. On the fourth day of the disease diathermy was started. The patient received four treatments and made an uneventful recovery by lysis.

2. Case of *Dr. Klein, Middlesex General Hospital, New Brunswick.* F. K., female, white, 29 years, housewife.

Past History: Measles, scarlet fever and diphtheria as a child, no sequelæ. Recurring attacks of tonsillitis, otitis media.

Present Illness: On March 25 patient complained of pain in the chest, cough and headache. Entered the hospital March 26.

Physical Exam.: Patient is delirious; there is cyanosis, marked dyspnea, involuntary passage of stools and urine. Temp., 104; pulse, 120; resp., 48. Dullness over the entire left lung, rales, bronchial breathing.

Lab.: W. D. C. 23,500, R. B. C. 4,000,000 Hb 70%, P. 77%, S. L. 18%, L. M. 2%, T. 1%, E. 2%. Type 2 as shown by mouse inoculation.

X-Ray: Entire left lung dense, obliteration of the left diaphragm and costo-phrenic angle. Diathermy was instituted March 28. Temperature started down by lysis immediately. Recovery was uninterrupted. Sequelæ: otitis media.

3. Case of *Dr. Spath, Hoboken, N. J.* V. G., male, white, 35 years, houseman.

Past History: Unimportant.

Present Illness: On March 28 there was chill, pain in the chest and cough.

Physical Exam.: Patient is delirious. Temp., 104; pulse, 140; resp., 40. Over the right lower lobe there is dullness, increased fremitus, rales, bronchial breathing and pectoriloquy.

Lab.: W. B. C. 26,400, R. B. C. 4,240,000 Hb 85%, P. 81%, S. L. 14%, L. M. 2%, T. 2%, E. 1%. Sputum negative for T. B. Type Pneumonia IV.

X-Ray: Lower right lobe is dense, there is an obliteration of the diaphragm and the costophrenic angle.

Diathermy was started on the sixth day of the disease. The patient received two treatments per day for the next five days. Following the first treatment the temperature began to go down by lysis. Subsequently empyema developed, for which patient was operated upon and recovered.

4. Case of *Dr. Spalding, North Hudson Hospital, Weehawken, N. J.* A. B., female, white, 33 years, nurse.

Past History: Unimportant.

Present Illness: On March 14 patient complained of chill, pain in the chest, cough and prostration.

Physical Exam.: Patient is obese and cyanotic. There is marked abdominal distention. Temp., 104; pulse is intermittent and 112; resp., 32.

Lab.: R. B. C. 3,900,000 Hb 60%, W. B. C. 6,000, P. 90%, S. L. 16%, L. M. 4%.

There is dullness, increased fremitus, rales and bronchial breathing over the upper and middle right chest anteriorly.

X-Ray: Clouding of the upper and middle right lobes.

On March 20, the sixth day of the disease, diathermy was begun. Patient made an uneventful recovery by lysis.

5. Case of *Dr. Opdyke, Jersey City, N. J.* P. W., male, white, 26 years, auto salesman.

Past History: Pneumonia, 1921.

Present Illness: Patient complained of chill, headache and cough.

Physical Exam.: Patient is delirious and cyanotic, abdomen is distended with gas. Temp., 104; pulse, 110; resp., 40. There is dullness, rales and bronchial breathing over the right lower chest.

X-Ray: Right lower lobe dense. Obliteration of costophrenic angle.

On the fifth day of the disease diathermy was started. Recovery by lysis complete.

6. Case of *Dr. Londrigen, Hoboken, N. J.* A. E., female, white, 42 years, housewife.

Past History: Negative.

Present Illness: Pain in the chest and labored breathing on March 12.

Physical Exam.: Temp., 103.8; pulse, 116; resp., 32. There is dullness, rales and bronchial breathing over upper and middle part of the right chest.

X-Ray: Clouding of the upper and middle part of the right lower lobe.

On the fourth day of the disease diathermy was instituted. Temperature immediately dropped by lysis.

7. Case of *Dr. Spath, Hoboken, N. J.* A. W., female, white, 24 years, housewife.

Past History: Pneumonia, 1918.

Present Illness: On March 31 patient complained of chills, headache and difficulty in breathing.

Physical Exam.: Temp., 104; pulse, 140; resp., 44. Patient is markedly cyanotic and restless. There is dullness, rales, bronchial breathing and pectoriloquy left lower chest.

Lab.: W. B. C. 19,200, P. 86%, S. L. 8%, L. M. 1%, T. 5%. Pneumococcus Type 4.

X-Ray: Clouding left lower lobe.

On the third day of the disease diathermy was started and temperature began to recede immediately by lysis. Recovery uneventful.

(We will mail you copy on the remaining seven case reports on request.)—H. G. Fischer & Co., Inc.

Comment

Following the use of diathermy in thirty cases, fourteen cases of lobar pneumonia are recorded, the temperature immediately fell by lysis within a few days. The ages of the patients treated ranged from 2½ to 72 years. Most of the cases presented poor prognosis as cyanosis, tympanitis, low blood pressure, incontinence of feces and urine, obesity and comparatively low leukocytic reaction. In all the cases

(Continued on page 10)

Treating Pneumonia Right in the Home with the FISCHER Type "G" Portable Diathermy Apparatus



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Simple—Convenient—Effective

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immediately following the treatment there was noted a marked relief from *cyanosis and painful and labored breathing*. The patients rested well, the majority sleeping a few hours. The evidence at hand however is insufficient to draw any justifiable conclusions as to the influence of diathermy in pneumonia. The author hopes that this therapeutic agent will receive a more thorough scientific investigation as to its merits and a more *universal* and *early* use with a view of determining whether it has a place in the treatment of pneumonia.

Controversy as to priority of claim and use of machines can be regarded as inconsequential. My answer is, that the physician treating the most number of cases with the best results following scientific steps as to history, blood pressure, blood count and radiographic examination (without undue handling of the patient while taking the radiograph as a rule the anterior posterior position is the only one that can be taken) followed by diathermy every one, two or three times daily according to severity. *The earlier the case is started on the diathermy the better the results.* If animal experimentation can be carried out, so much the better. Urine and also the sputa should be obtained as soon as possible to ascertain the type of the pneumonia.

As to the high frequency machine it should be one capable of producing 2,000 M.A. at a short damp spark gap regardless of the manufacturer, and there are many machines on the market not capable of doing this, thus useless in this particular line of work. It is known that the larger the spark gap the more interruptions, thus more farridism and voltage with annoyance to the patient. What we want in the treatment of this disease is heat sent into the lung substance, a painless process.

I do not believe that diathermia is a specific in the treatment of pneumonia, but do believe and know that it is supportive in character, it does not interfere with any line of treatment. All I ask is that the profession prove its usefulness. The results in these cases were all good, ages ranging from two and a half years to seventy-two years of age.

Electrotherapeutics in Urology

Victor Cox Pederson, A. M., M. D., F. A. C. S., New York

(Abstracted from the New York Medical Journal)

* * * Lincoln said that the only people he did not like were those he did not know. Most physicians seem guilty of not liking any new method of treatment which they do not know. Conservatism, reserve and caution are sound when based on a willingness to study, try and then judge. But blind prejudice, radical denial and arrogant complacency with methods already in vogue are unsound, because they have again and again been the bases of cults which have in the end compromised the medical profession. * * *

Like Lincoln's new friends, most of us like new methods after we have learned them. A familiar example is that the medical departments of the United States actually ignored and refused to adopt physical methods of all kinds—until they knew them through the result among the European forces. The Government has learned the worth of a new friend—Physiotherapy * * *.

Electrotherapy, which is only one department of Physiotherapy, can no longer be repudiated. Those who deny its value will soon be like the professor of 1850 in his disregard of the atomic theory. Those who regard it as a quick cure-all will be like the dupes of the promoter whose financial bubble bankrupts them.

Diseases are processes, hence there can be no sudden and absolute reversal of the processes by any means whatever
* * *

High Frequency and Alternating Current are synonymous terms, applied to rapidly oscillating current converted into heat by resistance overcome, and by molecular activity in living tissue. Local and general Diathermy are only manifestations, hence a definite quantity of heat may be developed

in a part such as the prostate. The heating is vascular, nutritional and relaxing.

The source is a standard transformer delivering high potential current * * *, the rheostat, the Multiple Spark Gap. * * * The electrodes are of the high vacuum glass type for the Oudin (mono-polar) current, in rectal or urethral prostatic work; or the insulated tip rectal electrode with the large metal pad on the tubes if Diathermy current be employed.

The current should produce only a mild warmth. The milliampere meter registers from 200 to 1000, within tolerance. Treatments persist from ten to twenty minutes on alternate days, and decongest the gland remarkably.

In modern urology Diathermy is used to increase healthful hyperemia and nutrition whenever any other modality might be used. It therefore augments the action of any other modality if used first. General Diathermy or Auto-condensation in prostatic lesions promotes absorption and elimination. * * *

Electrotherapy is by no means a cure-all in urology. Improved appliances, better diagnosis, finer selections of cases, lead to better recognition of its value. * * After about eight years of careful study I am of the opinion that Electrotherapy has a definite application in urology. * * * It possesses one unquestionable advantage, which is that it does not add to the destructive process of the disease unless inexcusable blunders are made.

Further, without doubt, it creates a healthy circulatory condition deep in the affected part, probably both through a local tissue and peripheral nervous influence. Unless the average local application it does not cause exfoliation of epithelium and thus add to a process already existing, as in gonococcal infection. In acute infections where the mucosa is so irritable that no instrument may be inserted only external forms as in X-ray, radiant light and Diathermy are possible.

* * * Where massage influence is called for, the positive pole of the static machine is in order, or the mild sinusoidal current combining faradism and galvanism. Where dilation is required, as in stenosis of the uterine os or in urethral stricture, the negative galvanic pole is very valuable. When stimulation and mild caustic action are sought for, then the galvanic pole is used cautiously.

For penetration of various medicaments—notably copper, zinc and iodine—ionization is the method. The copper and zinc must be attached to the positive pole and iodine to the negative pole. Too much caution can not be used with ionization until real skill is established.

Electrotherapy cannot be learned in a short time but it will reward all the time and energy employed both in learning and in applying it. With the caution and limitations indicated herein I recommend it highly.

□ □ □

“—and some of the so-called ‘little’ things are extremely far reaching in effect.”

Here is an excerpt from one of the Chicago papers of recent date:

Tick of Bishop's Watch Spoils Radio Lecture

A radio audience of 1,000,000 persons in Milwaukee, Minneapolis, Detroit, Cleveland, Indianapolis and other points in a radius of 500 miles of Chicago, which tuned in Sunday night to listen to a lecture by Bishop Fraser McDowell at Orchestra Hall, yesterday began deluging the Sunday Evening Club with complaints that it couldn't hear the lecture because of the ticking of his watch!

It developed that the Bishop had placed his watch too close to the transmitter while telling how small the world is!!

Treatment of Menorrhagia by Radium

B. Blacker (Lancet, March 3, 1923) says the results obtained by those who have employed radium in the treatment of uterine hemorrhage show that it is a valuable and efficient method in controlling excessive hemorrhage at the menopause, and that it can be employed safely for the same purpose in small uncomplicated fibroid tumors of the uterus, also in excessive menorrhagia in young women, which resist ordinary methods of treatment, can be brought under control.

Quartz Light Treatment of Leukoderma

Toomey has secured improvements in two cases of leukoderma by means of ultra-violet radiation. Complete pigmentation of some of the areas was obtained. More or less pigmentation was developed in all of the areas, the degree of pigmentation in some areas effecting a very acceptable cosmetic improvement. The Quartz light pigmentation of the achromic areas has persisted for more than six months with no apparent loss of the acquired pigment. The leukodermic areas that responded with complete or nearly complete pigmentation as a result of the use of the quartz light were the bones situated on the face. Achromic areas on covered surfaces of the body responded to the light with only a partial degree of pigmentation, the degree of pigmentation in an area being approximately in inverse ratio with the degree to which it had been habitually kept protected from the sun's rays.

When You Are Discouraged Read This

When a very young man, Abraham Lincoln ran for Legislator in Illinois. He was badly beaten.

Abe then turned his steps toward the business field. Failed. Spent about 17 years of his life paying up the debts of a no-good partner.

He fell in love with a very beautiful woman, became engaged and she died.

He entered politics again, ran for Congress and once more was swamped.

He then tried to get an appointment with the United States Land Office. Here again he fell down.

He became candidate for the United States Senate, and still another time he was beaten.

In 1856 he wanted to be Vice-President of the United States. Once more he succumbed to defeat.

Just one failure after another, bad failures, set-backs of the most trying kind. But in spite of all this, in spite of every beating he ever had, and all the little glooms that hovered over him, he eventually became the most beloved and greatest man this country ever knew and his name will go down through history—to time immemorial.

□ □ □

G O S H !

Where can a man buy a cap for his knee

Or a key for a lock of his hair?

Or can his eyes be an academy

Because there are pupils there?

In the crown of his head what gems are found?

Who travels the bridge of his nose?

Does the calf of his leg become hungry at times

And devour the corn on his toes?

Can the crook on his elbow be sent to jail?

Where's the shade from the palm of his hand?

How does he sharpen his shoulder blades?

—I'm hanged if I understand!

A PAGE OF FUN



Madge—So Charlie is teaching you how they play baseball?

Marjorie—Yes, and when I asked him what a squeeze play was I think he put one over on me.

□ □ □

A little girl, visiting for the first time in the country, watched the farmer's wife plucking a hen. After a careful scrutiny of the tedious process, asked the young visitor: "Do you have to undress it every night?"

□ □ □

"You look fed up, old man."

"Yes, I've had a tiring day. That little beast of an office-boy of mine came to me with the old gag about getting off for his grandmother's funeral, so just to teach him a lesson I said I would accompany him."

"Ah, not so bad; was it a good game?"

"No, it was his grandmother's funeral!"

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"I'll be through in a minute," said the ice-cutter as he stepped onto the thin ice.

A lawyer earning about \$3,000 a year was insured for \$60,000. He was once reported dead, but it was a false alarm. He cabled to his partner: "I survived. Try and break it gently to my wife."

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"No, I shall marry only a brave man," said the maiden firmly.

"But you must admit that it takes bravery for a poor mutt like me to propose to such a beautiful and talented girl," countered the suitor. So they lived happily, etc.

□ □ □

"When are you going to pay for that X-ray machine I sold you?"

Doctor Drill: "Pay for it? Why, you said that in a short time it would pay for itself!"

**SOME MEN ARE CONTENT
TO ENVY SUCCESS IN OTHERS;
OTHERS ACHIEVE IT FOR THEMSELVES.**

FISCHER'S MAGAZINE



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353

FEBRUARY, 1924

**SUCCESS IS ONE PART
INSPIRATION
AND NINE PARTS
PERSPIRATION**

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. II

FEBRUARY, 1924

No. 5

Physiotherapy

THE degree of success met with in the practice of physiotherapy depends upon the knowledge of thermo dality used and the method of its application. Only study and experience can make the successful practitioner.

Neurotic patients are tremendously aided by physiotherapy. In neuropsychiatry the mere fact of treatment acts as a tonic and gives the patient courage to bear up until Nature gets a chance to do her work.

Fractures and dislocations are aided by the absorption of inflammatory products and the prevention of atrophy. Hastening of bony union and promotion of metabolic processes is brought about by physiotherapy and there is a more speedy restoration of function. Heliotherapy, diathermy, iodides, rest and proper food are advised. Many cases of adhesions yield readily to treatment.

In some cases of osteomyelitis, copperization and ultraviolet rays with massage accomplish wonders. Tuberculosis of the bones will respond to ultraviolet treatment when all other means have failed. Ultraviolet in rickets need only be mentioned.

The different types of paralysis are more or less aided by physiotherapy. Only the most skilled operator can accomplish results here. Cerebral paralysis is the most difficult form to treat but even it is sometimes helped by rest,

massage and electrical stimulation. In spinal paralysis surgery is first called upon and physiotherapy used as an aid. Hemorrhage of the cord calls for the same treatment. Peripheral nerve paralysis can be aided to a greater degree than can any other form. In infantile paralysis the condition for regeneration is more favorable than in traumatic peripheral paralysis. Stretched muscles that have not functioned for many years but are not paralyzed may be restored by electrical stimulation.

Ulcers are much benefited by physiotherapy. In neuritis the cause must be removed by whatever means is necessary and physiotherapy then used. Sciatica, lumbago and all forms of myalgia yield readily to diathermy. Torticollis responds less readily. The progress of arthritis can sometimes be arrested though it cannot be cured. In neuro-cardio asthenia at least 60 per cent of patients are cured.

Dementia praecox is incurable but mental trouble of the praecox type clears up. Epilepsy *grand mal* cannot be cured but *petit mal* can be.

(J. Indiana M. A. 335-338, October, 1923.)

□ □ □

Dr. Homer Dupuy

(In the New Orleans Medical Journal)

Dr. H. W. E. Walther demonstrated the new Fischer hospital diathermy unit and lauded its value in the treatment of certain urological conditions. Diathermy, the latest and unquestionably the most useful of the high frequency modalities, is employed in two forms—medical and surgical—both being generated in the same way, but applied differently. In medical diathermy we raise the temperature of tissues only within physiological limits; in surgical diathermy we far exceed this limit; destroying tissue. d'Arsonval current is used. Dr. Walther stated that much benefit to his patient had been noted in applying medical diathermy to cases of arthritis,

prostatitis, seminal vesiculitis and epididymitis. The pain usually disappears after the first treatment and the swelling and period of confinement to bed are most favorably influenced. Applications require twenty minutes.

In surgical diathermy (electro-coagulation), where high frequency current is applied for the destruction of tissue by heat, without sparking, we have a modality for destroying new growths that is bloodless, clean, producing little shock, and which seals all lymph channels in its wake. For treating tumors of the bladder, cervix, urethra and external genitals, it surpasses scalpel-surgery.

Dr. Walther stated that he first became interested in surgical diathermy after a visit to Dr. Gustav Kolischer at Michael Reese Hospital, Chicago, where Kolischer has done commendable work with diathermy and radium in cancer of the bladder and of the prostate. It is today conceded by all that the only scientific way of handling malignant neoplasms of the bladder or prostate is through the open bladder. Some few selected vesical papilloma, of small size, can be successfully treated by diathermy and radium through the cystoscope. But the majority of bladder growths, extending from trigone into the internal vesical sphincter, are best treated through the cystotomy wound. Kolischer lays stress upon the point that, in treating tumors of the lower urinary tract by means of diathermy, one requires an apparatus that will deliver up to 4000 M. A. current. This can only be obtained in the newer type of machines.

The results obtained with diathermy in the Urological Service of the Hotel Dieu will be reported in detail later in a special article on the subject. Dr. Walther acknowledged indebtedness to his associate, Dr. C. L. Peacock, for his valuable assistance in this work.

Dr. Dimitry: Dr. Walther's demonstration carries a message of assistance to those who handle malignant cases, for by his Diathermy demonstration he enlightens us on a

procedure that may prove valuable in preventing metastasis i. e., if malignancy is accepted as a local and not a general condition. Surgery cares for the offending condition, but by removal it adds the possible danger of dissemination. The Deep X-ray is stated to be beneficial if administered a short while before operation for it is said to constrict surrounding lymphatics and vessels.

I have often desired, in my special line, to add still further precaution by the use of the hot iron, and I had hoped to have used this diathermy procedure, but lacked a working knowledge until this night, when the doctor has so well explained its use.

I would ask further enlightenment of its use when the eye is to be removed for a malignancy. After the use of the diathermy needle, should we wait for a slough before proceeding with the knife and scissors to remove the eye?

Dr. Walther: It is best to wait several days to a week for each slough to come away before attempting removal of tumor mass.

□ □ □

Enlarged Gland

From a California Contributor

Case C. M. came to my office with an enlarged gland, about the size of a hen's egg, with history of over exercised shankroid of about two weeks' duration, which had previously healed.

Treatment consisted of exposure to the rays of a Deep Therapy Lamp 30 minutes at a distance of 30 inches eight times. The gland was reduced to the size of a bean, and subsequently reduced to normal size with no further treatments. No recurrence of shankroid after two weeks, and then the patient was discharged.

Out of twenty-five cases treated by this method, only two went on to saturation.

Diathermy for Malignant Disease of the Mouth, Pharynx, and Nose

On the basis of the results observed in seventeen cases, Norman Patterson (*British Medical Journal*, July 14, 1923) asserts that in cancerous growths in the larynx and mouth the ultimate results are likely to be infinitely better when the primary growth is dealt with by diathermy, rather than by a cutting operation. Complete block dissection of the glands in the anterior and posterior triangles should be carried out even when these glands are not palpable. It is generally advisable to destroy the growth in the first instance and to remove the glands subsequently. Occasionally the two operations can be carried out at the same sitting. If there is any doubt as to the ability of a thorough clearance of the neck, then the gland operation should precede that on the primary growth.

If the glands cannot be dealt with it is little use applying diathermy to the primary tumor, except as a palliative measure. It is sometimes advisable to operate on the glands in the first instance, and to deal subsequently with the primary tumor, as consent for the neck operation may be difficult to obtain after the growth itself has been destroyed. Before commencing treatment, it is well to try and obtain consent for two or three operations, and to impress upon the patient the importance of the removal of the glands. If the diathermized area approaches or invades the fascial planes of the neck, a clear interval of a fortnight or three weeks should be allowed between the destruction of the primary growth and the neck operation.

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Cataract

By way of response to an inquiry from one of our readers, Dr. B. B. Grover offers the following opinion regarding possible results obtainable by Physiotherapeutic means in the treatment of cataract:

"As far as my experience and the knowledge of the experience of others go, there is little to be said that is new in the treatment of cataract. However, here and there much good has been accomplished in recent cases by Diathermy, followed by the application of the constant current.

"It is well known that bone is the last tissue to become heated by Diathermy, and when heated will hold the heat for hours; therefore it is logical to heat the surrounding wall of bone, which will slowly give up its heat to the adjacent tissues and maintain hyperemia for a considerable period of time. This may be accomplished by passing the current from temple to temple as well as its application by means of a non-vacuum high frequency electrode over the closed lids.

"This method should be alternated with 2 to 5 milliamperes of the constant current. The treatment should be continued for many weeks. These cases are usually accompanied with hypertension which should be corrected in order that the best of results may be obtained.

—Burton Baker Grover, M. D.

□ □ □

Diathermy in Gonorrhea in the Male

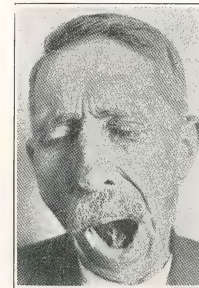
Serés is convinced that nothing is so effectual as diathermy in dislodging gonococci lurking in the tissues around the urethra, which may maintain the infection for years. His rectal electrode opens like a fan in the rectum, and thus acts on a large area, including the prostate and seminal vesicles. Even at the best, this treatment is not always successful, as some gonococci escape in the deeper tissues. But gonococcal epididymitis and gonococcal urethritis in women can always be cured with diathermy as the anatomic conditions allow a perfect electric bake. When technic is perfected to allow this throughout, gonorrhea will be conquered; it is merely a question of enough electrodes. With recent infection, the gonorrhea is cured in two or three sittings, but acute urethritis in the male once established has generally proved refractory. Only when it has subsided under the usual local measures, does diathermy help to eradicate the infection. With more and larger electrodes he is confident that every acute urethritis can be conquered.

(*abs.* J. A. M. A.)

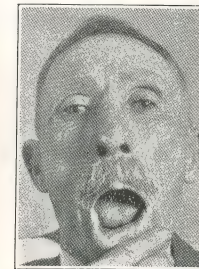
Endothermy

A Case Report of George A. Wyeth, M. D., of New York

CASE I. J. W., age 66, sailor, referred by Dr. W. B. Moodie of Valhalla, New York, reported that about 2 months previously a pimple had appeared under his tongue. He thought that the dental plate was irritating his mouth, but was assured by his dentist that this was not the case. He paid scant attention to the matter thereafter, but while he was at sea the pimple began to grow. On returning to New York he went to a hospital where "the doctor opened it and since then it has had a hole in it."



Before Treatment



After Treatment

Examination showed an indurated mass, about 3 centimeters by 2 centimeters in size, involving the right side of the floor of the mouth. It was foul and had a crater-like ulceration at right of the frenum. It was painful and tender, but no palpable, cervical glandular enlargement could be made out. On June 2, 1921, under ether narcosis the entire mass was completely surrounded or isolated by bipolar endothermy. To establish this definite wall of coagulation necrosis around the malignant area, it was necessary in this case to coagulate through the frenum, the under surface of tongue, and the inner surface of right jaw. A section for the microscope was then removed with impunity after which the whole mass was coagulated *in situ*. The dead tissue was next removed by scissors and the entire cavity seared over with the current to produce a further penetration of the heat. The lingual artery was not ligated.

Patient returned to room in good condition. Next day there was considerable swelling of tongue and a profuse flow of saliva, but he was free from pain and was able to take liquid nourish-

(*Cont'd on page 10*)

"Lobar Pneumonia is One of the Scourges of the Human Race"

LIKE Typhoid Fever it attacks the rugged as well as the weak. Unlike many diseases in which acquired immunity is developed, one attack is apt to increase the liability to subsequent seizures."

"... Through permission received from Senior Surgeon George B. Young, then Medical Officer in Charge of U. S. Marine Hospital No. 21, N. Y., and with the co-operation of Dr. Bryan who was chief of the Medical Service, this work was undertaken by the author's department at that Hospital. It was agreed that when accepted means of treatment had proven unavailing, Diathermy should be tried in the first case in which there was otherwise apparently no hope of recovery.

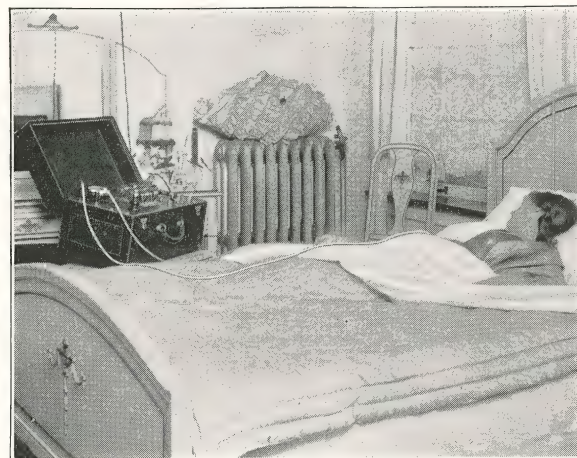
"In January, 1922, such a case occurred and the treatment by direct Diathermy was started. The result in this first case was one of the most dramatic in the author's medical experience. The relief the patient received from severe pleuritic pain and dyspnea was immediate. His cyanosis disappeared in about seven minutes after the treatment was begun. The temperature began to fall immediately by lysis. He received from 2 to 4 hours of complete relief after this, and each succeeding treatment, and made an uninterrupted recovery.

"Now Diathermy has been ordered as soon as the diagnosis is made in every case of Pneumonia at the Marine Hospital. It is not too much to assume that in many critical cases this marked relief of symptoms may be the turning point in disease."

—From Dr. Harry Eaton Stewart's
"Diathermy in Pneumonia"

The Treatment of Pneumonia with the FISCHER TYPE "G" PORTABLE DIATHERMY APPARATUS

is a scientific measure



The price of the complete apparatus is only \$275

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to tell you all about it*

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ment. He left the hospital on the third day in fairly good condition, although toxic absorption had rendered him very cachectic in appearance, with skin of a dark, yellowish hue, both of which conditions cleared up rapidly.

Sloughing of the remaining necrotic tissues began shortly afterward and was complete in the third week, although a piece of bone sequestered from the inner surface of the jaw in the sixth week. Wound healed completely, and patient has remained free from pain. There was early return to normal diet and a gain of 15 pounds in weight within 3 months. Both sides of patient's neck were treated with deep penetrating X-ray as a postoperative prophylactic measure.

If we consider the technique of the treatment, we shall understand the particular advantages of endothermy. The first step in the procedure is to describe in the healthy tissue a protective ring of destruction around the malignant area. That is, before a malignant area is touched it is completely surrounded by a wall of coagulation necrosis, which shuts off and destroys the blood vessels and lymphatics to and from the affected part. After this the entire lesion is destroyed and removed. Just how much current shall be used and for how long, the operator must learn by experience. Dosage is, however, always under accurate control and conservatism demands that one overtreat rather than undertreat, for a stimulating dose is worse than no dose at all.

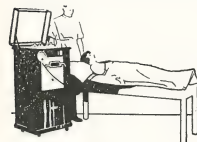
It is not difficult to understand that this line of destruction drawn about the malignant area to cut off blood vessels and lymphatics cuts off, also, the sensory nerves, and as the malignancy is removed the pain is alleviated. The value of the sterilizing effect of the heat upon a foul, discharging area is appreciated by the patient, for it renders his wound less offensive. One can scarcely overestimate the importance of these features of the method, particularly in the treatment of lesions in and about the mouth. In such cases, the small remaining slough comes away in from 2 to 3 weeks, and the area is completely healed within a few days thereafter. Patient can thus enjoy that early return to normal diet which is of the highest importance, since most of these cases are markedly cachectic, anaemic, and badly run down. Their chief postoperative need is nourishment.

(From the New York Medical Journal)

Albert C. Geyser, M. D.,

of Huntington, L. I.

in writing in the "American Physician" states in part,



"Diathermia is another measure which, acting in conjunction with the other two agents (the therapeutic bath and intravenous medication), is almost a specific in producing localized results in the chronic stage of disease.

"Diathermia, when applied to a joint or tissue, heats the same through and through. The local temperature of a joint or organ may be raised several degrees above the normal. When a given tissue is so heated there ensues an active arterial hyperemia.

"The capillaries become dilated, and increased leucocytosis with consequent diapedesis is a physiological result. While the effect is primarily of a local character, the general result is a far-reaching constitutional therapeutic measure. Such capillary dilatation increases the local effect of the intravenous medication, especially that of sodium iodide.

"When these three measures are employed at the same time, each one makes the other more effective; the bath and diathermia call for physiological functions, while the sodium iodide removes that which interferes with organic functions.

"After a short course of this treatment, the 'Chronic' is in a physiological condition for such specific treatment as his case may demand.

"The *anemic* requires the *intravenous use of iron and arsenic*, the *syphilitic*, *mercury* or *some form of arsenic*, the *paralytic* (peripheral) *diathermia* to the spinal segment and nerves involved. When it is of central origin the continuation of the iodides; for the pain *sod. salicylate*, etc., etc. Every therapeutic measure in chronic ailments especially, must aim to restore lost or perverted function according to

and in harmony with the laws of physiology. This concept seems to be understood by few, misunderstood by many and underestimated by almost everybody. *It is not the agent, but the specific reaction on the part of living cells that must be our constant aim in applied therapeutics.*"

□ □ □

Electricity as a Diagnostic and Therapeutic Aid in Medicine

By ROBERT P. STURR, M. D., Philadelphia

Extract from American Physician, May, 1923

No field in medicine offers more encouragement for study and application than does electricity. Having risen from the ages of a mystic healing device, and having passed through the hands of every charlatan and "pathy" that has existed and cast itself upon the gullible public, electrotherapy has survived and established itself into modern medicine as one of its firmest foundations.

We are teaching it in our medical schools; every large hospital has its department of electrotherapy, and many large industrial organizations and rehabilitation clinics are adding this to their hospitalization departments. Our Veterans' Bureaus have this department as one of their chief aids in the restoration of the wounded soldier to his former state of health. The war played a great part in bringing physiotherapy to the front. The percentage of permanent disabilities would have been alarming had not this science been utilized in the after treatment of wounds and fractures.

* * *

The physician who specializes in electrotherapy should be able to make application and have apparatus for the following currents: Static, Galvanic, Faradic, Sinusoidal, High Frequency and Ultra-violet * * *

The High Frequency current is one of high voltage which is interrupted thousands of times a second, making its voltage practically harmless. From this current we get * * * Electro-coagulation. This method has won its way by merits alone. No physician can help but marvel at the results obtained by Electro-coagulation especially in the destruction and diminution in size of benign and malignant growths.

This is not a Cautery as many think, but a coagulation of the tissue and a rupture of the cellular walls. To show that this is not a Cautery, we can pass the current through paper to tissue beneath and not burn the paper, yet coagulate the tissue. * * * Any part of the body will stand the application of this current, from a growth on the cornea to a massive tumor of the breast, or a tumor within the body such as the bladder.

This method has taken a gigantic place in surgical realms. Daily we are called upon to use this method as an aid to the surgeon.

THE TECHNIC

All parts are cleansed as in a surgical operation, and all precautions of asepsis are taken. Either local or general anesthesia may be used. The tumor mass is encircled, taking in some normal tissue, and then divided into areas and all parts destroyed, curetted and destroyed again, until sound and normal tissue is found.

Bleeding is controlled automatically by the application of the needle to the part, as it seals up the blood vessels. The part is left with a dry black coagulated surface, which remains so in most cases for a week; then this becomes moist and a slough forms with much exudate, which in the average case heals within two or three weeks by granulation, and the average final result is very little scar formation which is very pliable and non-contracting. In the majority of cases, this work is done at one operation, but where the area is too large or some has been left, it is perfectly correct

to repeat the procedure several times. But in malignancy it is best to destroy all affected tissue at once, as too little often acts as a stimulation to any remaining tumor cells.

PRECAUTIONS

How far one should go is a matter of great importance, as the current effect is beyond vision and extends down into the tissue; thus great caution must be used when working around the eye, etc., or in cartilage. I recall a case we did several years ago of a wart on a colored man's ear; we coagulated and removed the wart, but we also removed a nice round area of cartilage under the wart and left a perfect hole, which was an early lesson. Also, when working near a blood vessel, if one go too far the slough might involve it, and secondary hemorrhages result.

When ether is being given, it should always be taken away from the mouth as an explosion may result, but the ether in a patient's breath does not matter even when working in the throat. Secondary hemorrhage is apt to occur when the slough is interfered with or it is torn away too soon, or a blood vessel damaged.

ADVANTAGES OF THIS METHOD

The advantages of this method are many. There is little danger of infection, as the lymph spaces and blood vessels are sealed up, and the high heat kills all organisms. Each blood vessel is sealed while working. There is less danger of metastasis, as blood and lymph channels are sealed. Very little shock is present, as no blood is lost and the patient is not under ether long. Scar tissue, formed as a result of this treatment, does not contract, and therefore we can work around the eyelids without danger of entropion or ectropion following, or we may treat the flexor joint surfaces with no fear of the after-contraction which is usual in surgically treated cases. One hundred per cent cure is gotten from epithelioma of the face above the lower lip.

Those cancers of the prickle-cell type should be followed by radium and X-ray to the glands, and over the coagulated areas.

At the Polyclinic Hospital we are following each electro-coagulation with a two-third erythema dose of X-ray, heavily filtered—no matter what the type of malignancy.

* * *

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Diathermy in Surgery

Bianchini extols the advantages of diathermy in certain surgical cases, the absence of hemorrhage, the brief time required for the electro coagulation, in comparison with operative measures, and the ease with which the procedure can be repeated in inoperable cases. The drawbacks are the danger of secondary hemorrhage as the eschar drops off, and the danger of injury of bone, with sequestrum formation. A complete cure was realized in nearly all the twenty cases of tumors, angiomas, keloids or adenoids he describes, but he emphasizes that diathermy is merely an aid to surgery, and cannot take its place.

□ □ □

Western School of Physiotherapy and Western Electrotherapeutic Association Kansas City, Mo.

April 14, 15, 16, 17, 18, 1924

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Kansas City, Mo.

A PAGE OF FUN



"Ma, can I go out to play?"

"What, Willie? With those holes in your trousers?"

"Naw, with the kids across the street."

□ □ □

Teacher: "What is the shape of the earth?"

Willie: "Pop says it's in a helluva shape."

□ □ □

A class of boys had been studying physiology, and one day the teacher told them to write a composition on "The Spine."

Among the many papers sent in was the following:

"The spine is a bunch of bones that runs up and down the back and holds the ribs. The skull sits on one end, and I sit on the other."

□ □ □

"Do you play Mah Jongg?"

"No. I haven't touched a piano in years."

Doctor: "You have appendicitis. I must operate."

She: "Oh, Doctor, will the scar show?"

Doctor: "Well, it shouldn't."

□ □ □

Candid Hostess: "My dear, I should never have known you, from your photographs. Reggie told me you were so pretty."

Genevieve: "No, I'm not pretty, so I have to be nice, and it's such a bore. Did you ever try it?"

□ □ □

"The boss offered me an interest in the business today."

"He did?"

"Yes. He said that if I didn't take an interest pretty soon he'd fire me."

BEWARE THE HIGHER
COST OF
THE LOWER PRICE

FISCHER'S MAGAZINE



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IS THE PROPERTY OF
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354

MARCH, 1924

THE MAN WHO KILLS TIME
GENERALLY FINDS HIMSELF
CHIEF MOURNER AT THE
FUNERAL.

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. II

MARCH, 1924

No. 6

SERVICE

To Others

A certain magnate was once asked to what he most attributed his success. He replied "TO OTHERS." Ponder that—it contains deep philosophy. This was long years ago that he noted "To serve is to successfully survive."

"Quality"—An Expression of Service

"TO OTHERS" and "SERVICE" have long been established laws and watch-words throughout the FISCHER organization and have readily found expression through quality and satisfaction of FISCHER equipment universally recognized to be the world's finest product.

Fischer's Magazine

It is your magazine—devoted to your interest and welfare. It is your convention hall—a common meeting ground where all can look for good and wise counsel, discuss subjects of mutual interest and exchange ever welcome ideas. If you have an idea—an instructive talk—send it in, maybe your neighbor can use it. Be of service to him.

The Treatment of Chronic Prostatitis by Electro-Therapy

W. B. CHAPMAN, M. D.
Carthage, Missouri

In the treatment of chronic inflammatory conditions of the prostate, certain factors must be taken into consideration, which, when properly considered, explain the futility of the time-honored methods employed by physicians in the treatment of such cases. It is a well-known fact, that sufferers from chronic prostatitis, usually drifted from one physician to another, then to the chiropractor or divine healer, finally becoming wholly discouraged and giving up to a life of semi-invalidism and patent medicines.

Chronic prostatitis is almost invariably the end-result of a gonorrheal infection. And in the majority of cases, is induced by the injudicious injecting of various remedies by the patient or by unwise instrumentation on the part of the attending physician.

The prostate gland almost encircles the deep urethra at the outlet of the bladder. It contains some thirty or more branched tubulo-alveolar glands, embedded in a mass of muscular tissues. These glands open through their ducts directly into the urethra.

On the introduction of infection into these glands, there is the usual acute inflammatory reaction, which is followed in the chronic stage by the formation of fibrous (scar) tissue. This may cause obliteration or obstruction of the gland ducts, thereby preventing the escape of bacteria and cellular debris, which lie bottled up and may cause trouble for many years. The physician has treated this condition by prostatic massage and deep urethral injections of weak solutions of silver salts with somewhat unsatisfactory results, and, urologists in general, while accepting this form of treatment as standard, frankly admit that few cases of chronic prostatitis leave their offices cured. The mechani-

cal emptying of such glands, as have remained patent, by the prostatic massage is to be commended, but many prominent urologists have long maintained that the injection of antiseptics into the deep urethra merely irritates the urethral mucosa and tends to form more scar tissue, thereby doing more harm than good. These tubulo-alveolar glands are so formed that they effectually prevent the introduction of fluids from without inward, and it is highly improbable that even the minutest quantity of the antiseptic injected finds its way into the glands. I feel that we can discard the deep urethral injection as a procedure that is not only useless but harmful to the patient.

Now taking for granted that the accepted deep urethral injection is of no benefit, what other procedure can we resort to for the treatment of this condition? We know that massage alone will not cure the condition. We likewise know that medicines taken by mouth or hypodermically cannot reach the gland in sufficient concentration to be of much benefit, we must, therefore, search for some agent that will set up a healthy reaction within the gland, and that will not produce injury to adjacent organs and tissues. Fortunately, we now have such an agent in what is commonly termed diathermy. This merely means the application of currents of electricity of low tension and high amperage which produce heat within the deeper parts of the body.

It has been found that gonococci cease to multiply and cannot long exist when subjected to a temperature of 104 degrees Fahrenheit. Sampson claims that it is possible to produce a temperature within the tissues by the use of diathermia to as high as 138 degrees Fahr., without injury to the tissues. This being correct, one can easily see how effective this modality will be in the treatment of an old gonorrheal infection of the prostate. Furthermore, the application of heat within the gland causes a marked hyperemia, with increased vascularity and consequent increased activity of the secretory glands; the increased blood

supply aiding in the absorption of waste products and the secretory glands mechanically washing out accumulated concretions and cellular debris. There is also an attraction of leucocytes to the part with consequent destruction of bacteria. In other words, we simply induce within the old, stagnant, prostate, a healthy reaction which is identical with nature's method of combating infection. We have all of the factors found in a healthy inflammatory reaction except the pain, and diathermia is painless. Neither are we introducing some foreign substance, usually a poisonous mineral salt, into the system, which must be absorbed by the system with more or less damage to all vital organs.

As the prostate gland is easily accessible through the rectum, we have no difficulty in applying one electrode in contact with the gland. For this purpose the prostatic electrode designed and sold by H. G. Fischer & Company of Chicago, is the best. It is hollowed out on one side, can be easily introduced into the rectum, and, when in place, fits snugly over the prostate. The larger, indifferent, electrode should be placed on the abdomen so that its lower edge is about one inch above the symphysis pubis and at least that far from the hip bones. I have found that whenever possible the current will follow the bones in preference to the softer tissues. For this electrode, either wire mesh or block tin should be used. It should be about five inches in diameter and should be well soaped and in perfect contact with the skin. In introducing the prostatic electrode, I find a coating of glycerine quite effective.

While any standard High Frequency apparatus will prove effective for this work, I have been able to obtain the best results with the H. G. Fischer cabinet type of machine. I have used other machines, but with mediocre success. To be successful in this work, it is imperative that one uses a machine which has a capacity of at least three thousand milliamperes. While I never employ more than half that amount in treating, still I get better results with the larger machines than I obtain with the smaller types that must be pushed to capacity.

I have one of the smaller machines, but seldom employ it for diathermia treatments. There seems to be a difference in the rapidity of the oscillations, which probably explains the better results obtained by using the higher type machines.

While I have discussed the good effects produced by the internal heat, I have failed to mention another reaction which I consider of far more importance than the mere production of an internal hyperemia in the diseased area. With the rapid transmission of these electrical charges, there is set up within the tissues a certain amount of chemical action. We have all watched the experiment in the physical laboratory wherein electricity was allowed to flow through a U-tube containing water and saw the liquid transformed into its component gases, oxygen and hydrogen. We have likewise studied the reactions taking place in the wet cell batteries, and later on have seen how complex molecules may be broken up by electricity into simpler compounds or even into the elements. That such a reaction occurs during the transmission of the current through the tissues of the body is quite apparent. We mentioned above that the prostate lies at the outlet of the bladder. As is well known, with inflammatory conditions of the prostate there is more or less obstruction to the out-flow from the bladder with a consequent accumulation of salts and complex protein products along the walls and lower portions of the bladder. This is especially true in old men who have hypertrophied prostates with retention of urine. In the chronic prostate there are also crystals and an accumulation of protein substances, mainly cellular debris, which are affected by the passage of the current. That these substances are broken up into simpler compounds that are more readily absorbed by the blood stream can be demonstrated by the rapid decrease in shreds, etc., in the urine following a few of these treatments.

Another factor. We are also aware that most chemical reactions proceed only in a liquid medium, usually water. We have here the ideal location for chemical reaction, with the prostate and one electrode at the base of the bladder and

the other above; and in giving these treatments, I prefer to have the bladder partially filled as I depend on this chemical exchange of ions to aid as materially in the treatment as the mere production of heat within the gland. What changes of temperature take place within the bladder, I will not state here, but that there are changes, one can readily see. At the end of the treatment, I massage the gland to expel cellular debris and then have the patient void, thereby thoroughly cleansing the urethra, and expelling all foreign material discharged from the gland or stirred up in the bladder by the passage of the current. It would appear that to produce this effect, the galvanic current would prove the most effective, but clinically, I have failed to get better results where it was employed. Where there is retention of urine, I usually alternate treatments with the Morse Wave Generator, placing the electrodes exactly as I do for diathermia, except that I use the regulation Morse pad over the abdomen, giving ten milliamperes for ten minutes with the idea that I ionize the urine within the bladder and break up the complex salts that so quickly accumulate in a condition of this kind. I believe the treatment to be justifiable.

In giving the diathermia treatments, I advance the current slowly to about 1,200 milliamperes, allow it to run for twenty minutes and then turn it off gradually, I then massage the prostate, as mentioned above, and have the patient evacuate the bladder. The presence of material in the urine will act as a check on the progress of the patient. The shreds and cellular debris are usually excessive at first, but clear up as the treatments proceed. I give the treatments every other day in mild cases, and daily, where there is retention of urine in the bladder, washing out the bladder with a weak boric acid solution after the treatments if the patient's condition demands it. I have treated a number of cases of prostatitis by this method, and have yet to treat one that was not rapidly and materially benefitted. I consider this method a distinct advance over the older methods, and believe that it will soon supplant all other procedures.

Treatment of Gonococcal Infection by Diathermy.

—The reason for the selection of diathermy for the treatment of gonococcal infections by E. P. Cumberbach and C. A. Robinson (*British Medical Journal*, July 14, 1923) is because the gonococcus can be destroyed at a temperature which is not high enough to damage the living tissues and because the diathermy raises the temperature of the tissues *en masse*, whereas other methods of applying heat raise the temperature of the superficial parts only. In almost all of the cases of gonococcal arthritis treated the pain was abolished, the swelling was reduced, and the range of motion was increased within a comparatively short period of time. Cases of gonococcal orchitis and epididymitis without exception quickly were relieved of pain and swelling after diathermy, even if the symptoms were severe. Convincing proof of the therapeutic power of diathermy in gonococcal infection was furnished by the disappearance of pain and swelling from joints or scrotum after the application of the treatment to the site of the original infection. Cases of gonococcal arthritis were freed from pain after application of diathermy to the urethra and prostate, or urethra and cervix, without the inclusion of the joints in the treatment. There were also cases in which the application of diathermy to the joints did not procure much relief until the parts originally infected were included in the treatment. Diathermy was also applied to the urethra and cervix uteri in the female in cases in which these parts alone were infected. Such applications were followed by disappearance of the gonococci and cessation or diminution of the discharge. The effectiveness of the treatment was demonstrated by the failure to find gonococci in repeated attempts and the subsidence of arthritis after the application of diathermy, not to the joints but to the parts originally infected. Good results were also obtained in the treatment of prostatitis.

□ □ □

A gentleman has never heard a story before.

□ □ □

That Monthly Physiotherapeutic Meeting!

*We know that you will be very glad to hear that we have
arranged to have with us on Monday, April 14th*

HARRY THOMETZ, M. D., of Chicago, who will perform a Tonsil Operation with Electrocoagulation, and also to give a report on similar cases _____
10 to 11 A. M.

RAYMOND F. ELMER, M. D., of Chicago, who has successfully operated on over 125 cases of Tonsils with Electrocoagulation, and who will demonstrate the correct technic _____ 11 to 12 Noon.

K. T. LAWLESS, M. D., also of Chicago, promises to give a talk on PHYSIOTHERAPEUTIC METHODS AS PRACTISED IN EUROPE, and we hope to have him on the floor at 1:00 P. M.

C. H. FREDERICKSON, M. D., who is connected with the Veterans' Bureau, at Chicago, will be with us from 3 to 4 P. M., and, although he does not tell us specifically just what his subject will be, he is such an experienced Electrotherapist that his hour will pass all too quickly.

We Will Have Ample Space for All of You

How to Get Here:

DRIVING—Follow Diversey Boulevard west to Western Avenue, then south to Wabansia Avenue; 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.

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Treatment of Myocardial Insufficiency

WILLIAM MARTIN, M. D.

Atlantic City, N. J.

Formerly Pres. Amer. Electrother. Assoc.



It has been the custom for generations to use "heart tonics" when a patient applies to the physician for treatment of "weak heart," which method still holds with the majority. The physician will feel the pulse and sometimes auscult the heart as he feels necessary and as a rule this completes the physical examination. Being expert in this type of case, he feels it unnecessary to do more, so the usual prescription of digitalis or strophanthus is given and the case told to return at a suitable time for another prescription.

Recent years have brought the study of the heart and circulation as a necessity in practically all types of cases, since we have such constant evidences of some derangement of a part or all in many chronic diseases. Perhaps Mackenzie has done most toward establishing the weak heart muscle as a factor in so many disturbances of a vital nature, particularly in angina pectoris. A myocardial inefficiency from whatever cause, whether overstrain or toxemias, is recognized to be a menace to longevity, and may be a distinct menace to life itself under stress.

Given a circulatory stasis from a hepatic engorgement or other venous blocking, we will have stress against the right side of the heart, which will show itself as a simple strain with moderate symptoms, but as this increases later we will find an actual dilation develop with its dangers. Take the circulatory stress such as accompanies an active hypertension from any cause, functional or organic, we will find the ventricular walls endangered, but as they seem to have greater compensatory powers, the hypertrophy will be the first effect, but as this stress continues, we will have the evidences of failing compensation and loss of muscle strength.

What can we do for such cases? Shall we use the time honored doses of the heart tonics which must be given in increasing doses with their dangerous accumulative effects, or shall we use the more modern methods which some of us have learned to depend upon? In a practice covering thirty-five years the writer used the former methods during two-thirds of that time, but the remaining third with its more modern therapy has demonstrated the greater value of electrotherapy in these as well as other cases, and it is the modern method that he now wishes to place before the reader.

Granting the cause to be known and as much as possible having been done to eliminate it, we may proceed to treat the actual condition. If back of the myocardial weakness there is a hepatic engorgement, we must remove that by the use of diathermy as has been frequently mentioned in these pages. This will be the first step, which may be followed by diathermy of the heart. This must be done in a safe and sane way, so a more detailed statement will be given. We use two metal electrodes of the usual type approximately 4x5 inches, and when properly wet, they should be applied exactly opposite each other, the one directly over the heart and the other directly back, *not* allowing the current to flow in an oblique direction, but straight through. This is exceedingly important. Taking for granted that you have the proper machine with a good spark gap, the current is turned on with the minimum of current charge. The amount is slowly increased until in about five minutes you have reached the maximum, which should not be more than 300 to 500 ma. in the average case, and in some even lower. This is continued for from fifteen to twenty minutes altogether, counting the slowing up for the completion of the treatment. The ending may be done in about the same manner, although some take less time for this. Playing safe is the best method, so as the treatment is going on, the physician will note any effects upon the circulation and general condition of the patient, so that the treatment can be cut off at a minute's notice, if necessary. As the treat-

ments are given from time to time, somewhat larger doses may be given under the same watchful care, and in time the response will be noticed in a general betterment of the patient.

Vibration of the interspaces of the 7th cervical and 1st dorsal will add to the value of the diathermy, and this may be given for from 1 minute to 1½ minutes, following the other, as its effects upon the heart centre has great value, and the writer always uses it in this manner. The treatment just outlined will usually suffice, if persisted in, and the writer trusts that it may help others as much as it has him in the therapy of these cases.

□ □ □

Diathermy of Facial Paralysis.—Bordier recommends diathermy in facial paralysis, especially in cases with a slight reaction of degeneration.

□ □ □

In response to an inquiry on the value of Diathermy in connection with fractures, we received the following short but clean-cut article, for which we are very grateful:

In diathermy on fractures, we permit knitting to take place in the normal way, without disturbance for a week or two, until the dressings can be handled without displacing the fragments. There is no rule about this; each case must be judged individually. Then we remove the dressings daily and apply diathermy. Lots of work; but results are worth it. Do not mount electrodes in casts; that is dangerous; ischemia may result from the swelling that the diathermy produces; and there is no way of checking burns. If a plaster cast cannot be made removable, we omit the diathermy.

Cordially,

*Miles J. Breuer, M. D.
Lincoln, Neb.*

Diathermy in High Blood Pressure and Other Conditions.

F. Howard Humphris, F. R. C. P., Brit. M. J.

Patients with high arterial tension may be treated by diathermy and kept in a state of safety thereby. If the hyperpiesia be recognized early, diathermic treatment will prevent an otherwise inevitable consequence. Even though arterio-sclerosis has become established the process may be stayed and the very serious sequelae avoided.

The effects are two-fold—one is general or constitutional, affecting metabolism, and the other is a local effect upon the vasomotor system. Clinically there ensues a general improvement in the health and the mental outlook, while chemically there results an increase of solids in the urine and in the perspiration. All these effects are perhaps due to the relaxation of the arteries and the better circulation resulting therefrom.

The use of medical diathermy in pneumonia has been proved of value and attention is called to this work in the United States Marine Hospital, which the author says has the best medical service of any country he has visited.

He also believes that medical diathermy is destined to play an important role in the treatment of pulmonary tuberculosis.

In the discussion of this paper Dr. Turrell said that the mode of action of diathermy and how it might apply to the case in hand should always be considered in arriving at a decision as to treatment; for example, in a case of spasmodic dysmenorrhea would relaxation of the spasm relieve the patient and would diathermy accomplish this? In an unresolved pneumonia would an increased blood supply help and would diathermy bring this about? He added that diathermy had been found of great benefit in non-surgical hemorrhoids, in dysmenorrhea and in coccygodynia of the simple congested type. It is useful, he said, for high blood pressure, but a hot bath is of equal value and is more simple

treatment whenever possible. It is useful in rheumatoid arthritis, but must be long continued. All discussants agreed upon its usefulness in relief of gonococcus infections.

□ □ □

Stricture of the Urethra

BURTON B. GROVER, M. D.

Vacuum tube currents may be of service in removing spasmodic stricture, but I doubt very much their being of service in the organic form. Strictures resulting from gonorrhea may be removed by electrolysis. I have cured over 100 cases by this method.

Technic—First ascertain the size, the location of the stricture, then place a well-soaked pad on the abdomen and connect to the positive pole of a direct continuous current. Connect the negative pole to an olive-shaped urethral electrode, one size larger than the lumen of the stricture; pass the electrode down to the stricture and turn on the current gradually up to from 3 to 5 milliamperes; keep the electrode in contact with the stricture by gentle pressure until it passes, then withdraw the electrode through the stricture and turn off the current gradually to zero before removing the electrode from the urethra. Repeat the treatment every seven days, each time using a larger electrode until the normal calibre of the urethra is restored. There are a few old strictures that will not yield to this treatment. Strictures that have been operated upon are very rebellious and often incurable. For these cases the Neiswanger technic, 1% solution of thiosinamine cathartically, is often successful.

□ □ □

In King Tut's tomb was found a tablet giving a recipe for the Elixir of Youth.

Hooray!! The recipe is *honey and wax, mixed with fourteen vegetables*. The vegetables, however, are not named in the inscription on the tablet.

Gall Bladder Infection

At the recent annual meeting of the Iowa Radiological and Physiotherapy Society at Des Moines, Dr. A. B. Adams of Omaha, Nebraska, read a paper on "The Value of Sine Wave Current in Obstruction of the Hepatic Duct".

He reported a case which has passed through the usual operative procedure for drainage without satisfactory result—yet the Morse Wave Generator, by its selective surging action accomplished all that was desired.

Dr. B. B. Grover, of Colorado Springs, Colorado, in the February number of the "Bulletin of The New England Society of Physical Therapeutics" reports several cases successfully treated by the Sine Wave.

The infected Gall Bladder evidently loses its muscular tone necessary to expel into the duodenum its putrifactive contents, and just a little non-irritating mechanical help applied to this region with the Gall Bladder Nerve Area in the circuit, is apparently the one thing needed.

Treatment of Gonorrheal Affection by Diathermy.

C. A. Robinson, M. B., D. M. R. E., Brit. M. J.

The gonococcus is less resistant to rises of temperature when in culture than are most pathogenic organisms, though the temperature most suited to its growth in living tissues is not known. Whether the destruction of the germs by diathermy is due to direct or indirect effects of the current the author does not know, but he is sure of the results in gonorrheal infections of the joints, namely, that such cases are amenable to treatment by diathermy. The optimum temperature to secure these effects by diathermy is about 115 degrees F. Results in cervicitis prostatitis, epididymitis, etc., have been very gratifying.

A PAGE OF FUN



There were two negro buck privates discussing the relative values of their buglers during the recent war. You know, negroes are naturally musical, and they can certainly do great things with a bugle.

The first private stated, "Why, nigger, that bugler of mine am so good that when he plays 'Pay Day' it sounds jes 'xactly like the Boston Symphony Orchestra playing 'The Rosary.'"

The second negro replied, "Why, nigger, you aint got no bugler a-tall. When Snowball Jones, dat bugler of mine, wraps his lips roun' dat bugle and plays 'Mess Call,' I looks down at mah beans and says, 'Strawberries, behave; you're kickin' de whipped cream out of de plate.'"

□ □ □

"I don't like your heart action," said the medical examiner. "You've had some trouble with angina pectoris."

"You're partly right doctor," said the applicant, sheepishly, "only that ain't her name."—College Humor.

□ □ □

Little Ada—"Mother, shall I run out and post this letter?"

"No, child, certainly not. It's pouring in torrents, and not fit to turn a dog out of doors. Let your father go."

□ □ □

Biddie: "Suppose you have been in the navy so long you are accustomed to sea legs?"

Middie: "Lady, I wasn't even looking."

Yachtsman: "If this squall continues, I shall heave to."

Passenger (wanly): "What a horrid way to put it."

□ □ □

On a farm in South Georgia is posted this sign:

"Trespasser's will be persecuted to the full extent of 2 mean mongral dorgs which ain't never been ovarly soshibil with strangers and 1 dubbel barelt shot-gun which ain't loaded with no sofy pillers. Dam if I ain't tired of this hel raisin on my proputy."

□ □ □

There was a young person named Ned,
Who dined before going to bed

On lobster and ham,
And salad and jam,
And when he awoke he was dead.

**GIVE THE MOSQUITO
CREDIT—WHEN HE
SEES AN OPENING
HE DIGS IN.**

FISCHER'S MAGAZINE



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356

MAY, 1924

SUCCESS CONSISTS NOT
SO MUCH IN SITTING UP
AT NIGHT, AS BEING
AWAKE IN THE DAYTIME.

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. II

MAY, 1924

No. 7

A Few Pointed Paragraphs

"Stanford Medical College of California announces a course in **Physical Therapeutics** to occupy a part of the third year curriculum of undergraduate work. A six months' course is now available at the same University Hospital to any graduate in medicine who has completed at least one year's hospital work in medicine and surgery."

"Columbia University is contemplating extensive laboratory equipment and apparatus for their Medical School. The **Harvard School of Medicine** has announced a graduate course in Physiotherapy."

"A course of lectures on **Physical Therapeutics** has been for some years a part of the undergraduate work at the **University of Pennsylvania** and **Jefferson Medical College of Philadelphia**."

"Instruction in these modalities is being given in **McGill University in Canada**. The **Army** is running classes in **Physical Therapeutics** for the proper education of physiotherapy aides for the **Government Hospitals**."

"The **Lane Medical Library** at San Francisco is arranging a collection of reprints on **Physical Therapeutics** readily available to physicians and medical students, as a stimulation to acquire the best knowledge of this essential adjunct to medical therapeutics."

"A course in **Physical Therapeutics** has been organized in the **Medical School** in the **University of Brussels**."

"The day when **Physiotherapy** was looked upon as of doubtful propriety has passed away. It has come 'into its own' as a recognized classic branch of the art of healing."

"WISE MEN PROFIT BY THE HANDWRITING ON THE WALL."

Treatment of Hemorrhoids by Electrolysis

By H. W. SIGMOND, M. D.
Crawfordville, Ind.

At one time there was confusion as to the true nature of this affection. It is now generally recognized as a pathologic condition involving, primarily, the blood vessels about the termination of the bowel. When Bodenhamer employed the term "hemorrhoidal disease," he adopted the most appropriate designation the affection has ever received. The simplest and best clinical definition that we can give and correctly state what we mean would be: "Hemorrhoids or piles are tumors originating in a pathologic condition of the hemorrhoidal blood vessels."

The cause of hemorrhoids are predisposing and exciting. The predisposing causes are: the upright carriage of man. He maintains the erect attitude for about two-thirds of the twenty-four hours. Climate and season are also factors, occurring as it does least frequent in mild or temperate climates, because the torrid climate has a tendency to diarrheal affections and in very cold regions the act of defecation is postponed or unduly hastened, thus leading to constipation and straining. Diet and habit are also causes. Over-eating, particularly of rich and highly seasoned foods and the use of alcoholic beverages are conducive to hepatic engorgement, constipation and intestinal toxemia. The middle

period of life is the age most affected. As for sex, they are generally more prevalent in the males, owing to their heavy lifting and hard work.

Exciting causes are constipation and the act of defecation. In constipation the stools always require strong muscular effort to expel the contents in a direction opposite to the return blood current. Straining at stool, purgatives and other drugs, certain articles of diet, pregnancy, parturition and tight lacing are all exciting causes.

In this paper we will use the classification of external and internal hemorrhoids:

By external hemorrhoids we mean all of those situated below or upon the distal side of the muco-cutaneous line. They are either covered by the skin or skin and muco-cutaneous tissue of the anus and are fixed in their position outside of the external sphincter muscle.

Of the external pile we have the varicose pile, the thrombotic pile and the connective tissue pile or tab. For the external piles some have recommended positive galvanism. My experience has not been very satisfactory with it. Under local anesthesia I find that one can remove the clot or cut off the cutaneous tabs without much pain or discomfort. In fact, I can do it quicker surgically than by electrolysis.

Internal hemorrhoids are located above or upon the proximal side of the muco-cutaneous line and invested wholly by mucous membrane. It is dealing with these that our electrical treatment is the treatment of choice.

If the operator has a good galvanic outfit and understands the polarity effect he can get excellent results, does not confine his patient to bed, does not run the chance of an infection and does not expose his patient to the dangers of an anesthetic.

In order to secure the desired results the action of the two poles must ever be borne in mind. Electricity is a dependable

agent, acting in its various forms according to well known laws which must govern its uses. The special properties of each pole are physical and therapeutic. Each is the opposite of the other. Thus at the positive, oxygen is produced; at the negative, hydrogen. The positive produces an acid condition; the negative, an alkaline. Positive is a vaso-constrictor and stops bleeding, while the negative is a vaso-dilator and favors it. The positive is a dryer of tissue and hardens it while the negative produces moisture and softens it. The positive exerts a sedative influence while negative irritates it. The positive coagulates the albumin of the blood while the negative liquifies and disintegrates organized structures.

There are several methods of treating hemorrhoids electrically, and all of them have their advocates. On the other hand, all methods are condemned by those whose experience with them has not been satisfactory. I have tried several methods, but prefer the positive pole, using the needle. The preparation of the needle is as follows: (1) Take an ordinary cambric needle and insulate it by winding silk thread around it from one-fourth inch from the eye to within one-fourth inch of the point. (2) Stick the point of the needle into a cork for about one-eighth of an inch, thus leaving one-eighth of an inch above the cork. (3) Shellac the needle from the upper end of the thread down to the cork, thus leaving the part above the thread unshellacked and uninsulated to fit into the needle holder. The part in the cork is also uninsulated. After the shellac has thoroughly dried, remove the needle from the cork and it is ready for use.

For local anesthesia use quinine and urea hydrochloride or novocain. Inject the pile and wait a few minutes for the anesthesia to take effect. The negative pole is attached to a large moist pad and strapped to the abdomen so as to make and keep good contact, thus assuring one of a steady current, because if the current breaks it is uncomfortable to the patient. Attach the positive pole to the needle and insert the needle in the pile. Insert it into the top of the pile

carrying it up to the thread; thus your uninsulated point is in the pile. The idea of the thread is to make a shoulder to prevent your inserting the needle too deep and by using the thread for a guide you can always know that you are just in deep enough and not beyond where you want to stop. The shellacked insulation is in the wall of the pile and your current then goes into the pile. Use about ten or fifteen milliamperes until the pile gets a decided blanching or ashy appearance. Puncture the pile as near the top as possible, because if you get too close to the base, you get more after-pain.

For about two days you will notice no decided change in your patient, but on about the third day you will see a smile of satisfaction. Always warn your patient that it will be a day or so before you expect much of a change and he will not be disappointed at not getting immediate relief.

Treat each pile separately, using a new needle for each pile, because the positive pole causes the needle to roughen, deteriorate and thus it will break off when used the second time. A good way is to treat one pile at a sitting; however, some treat all of the piles at one time. This I believe causes too much strain on the patient; whereas by treating one pile at a visit he notices no inconvenience.

It is necessary to have an assistant as you need some one to hold the speculum while you guide the needle with one hand and turn on the current with the other.

There are various specula on the market that can be used to bring the pile into view so one can use the instrument to which he is most accustomed.

It must be remembered that this treatment is not a panacea for all rectal troubles, but for all internal piles that are not of the fibrous variety you can assure your patient of a cure.

*Read at the Thirtieth Annual Meeting of the American Electrotherapeutic Association.

Endothermy in the Treatment of Accessible Neoplastic Diseases.—WYETH (*Ann. Surg.*, 1924, 79, 8) says that desiccation was devised and has been so brilliantly developed by Clark of Philadelphia. The desiccation spark is not hot enough to carbonize, but is of sufficient heat to cause rapid dehydration of the tissue, rupturing the cell capsule and converting the area treated into a dry mass. Moreover this method destroys tissue without opening blood or lymph channels and will act as a styptic when there is oozing of blood. It is impossible to over-estimate the importance of the fact that with endothermy the growth is removed as a necrotic mass instead of as a group of viable cells. An important difference between endothermy and all other methods of cauterization by heat is that in endothermy the active electrode is cold when applied. Heat comes from within by the resistance of the tissues to the current. The three most important neoplastic tissues, tuberculosis, benign and malignant neoplasms, and syphilis all yield to this treatment. Cases are cited in full through article.



Fig. 1



Fig. 2



Fig. 3

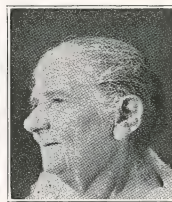


Fig. 4

Figures 1 and 2—Basal cell epitheloma of nose. Given single treatment by monopolar endothermy under local anaesthesia. Figure 2 shows same case fourteen days later; lesion completely healed.

Figures 3 and 4—Large basal cell epitheloma of left ear, involving cartilage. Figure 4 shows good cosmetic result after treatment by monopolar endothermy, under $\frac{1}{2}$ per cent novocaine.

Endocervicitis

By W. D. CHAPMAN, M. D.

Dear Mr. Fischer:—

I have your inquiry enclosing letter from Dr. W. F. Stanton of Washington, D. C. I will give you the technic for treating the condition very briefly and if the doctor wishes more detail, I will be very glad to furnish it. I will not attempt to discuss the pathology of endocervicitis, as that can be obtained from any text-book and is already understood by Dr. Stanton, but will say that in this, as in all other inflammatory conditions, the acute cases are more amenable to treatment than the chronic, and require less variation in the technic employed. I have experimented widely in the treatment of such conditions, and recommend the following procedure:

Take a Morse Wave vaginal electrode, lubricate it with glycerine and insert within the vagina. The Morse Wave sigmoidal or prostatic electrodes will do, but are not as effective as the larger vaginal electrode. This electrode is attached to the D'Arsonval connection. For the larger indifferent electrode, either block tin or wire mesh should be used. This electrode should be four or five inches in diameter and is placed on the abdomen with its lower edge about one inch above the symphysis pubis and midway between the anterior superior spines of the iliac bones. Both the skin and the electrode should be coated heavily with soap lather to insure a firm contact. This electrode is held in place by applying, first a towel, and then a light weight to prevent its slipping. The current is advanced slowly from 200 to 1000 or even 1200 milliamperes, is allowed to run for at least twenty minutes, and is then turned off gradually. If the smaller sigmoidal or prostatic electrode is used, the patient will complain of being uncomfortable when the current reaches about six hundred milliamperes.

In acute cases, these treatments should be given daily at first, but in chronic and sub-acute cases every other day is sufficient. It takes from three to eight weeks to cure a case of this kind.

Before coming for treatment the patient should take a hot cresol douche allowing the water to flow into the vagina for at least fifteen minutes. This not only cleanses, but has an important therapeutic effect. The uterus is at first engorged with blood, but soon becomes contracted down, much the same as the skin on a person's hands will do when held in water for some time. This helps to dislodge slugs and mucous and prepares the field for the diathermy treatment. This is a very important part of the treatment, and the patient should be instructed to carry it out religiously.

The above technic will prove effective in treating almost all inflammatory affections of the vagina, uterus or adnexa. There are a number of complications, however, that require special procedures. Chief of these are erosions of the cervix, and pus tubes.

1. I treat mild erosions of the cervix with the water-cooled lamp giving five to eight minutes at an eight-inch distance. If granulations or papillomatous tissue is present, it should be removed by fulguration. For this work, properly fitting glass speculae are essential. (See page 79, H. G. Fischer & Company Style "FO" Book of Instructions.)

2. A careful examination should be made for pus tubes. The high frequency current acts as a poultice on these and will flare up an old pyosalpinx that has lain dormant for years. The first symptom of this calamity is pain in the lower abdomen, followed in severe cases by chills, fever, and later peritonitis. I have had one or two emergency operations on account of this, but since coming to understand the condition, I even treat these pus tubes using the technic mentioned above, and have effected numerous cures. If this complication is recognized in time, it can be arrested by

(Cont'd. on page 10)

Program for Our Monthly Physiotherapy Meeting

Tuesday, June 10, 1924

These clinics and lectures that we have been putting on the calendar of late have created so much pleasant and favorable comment that their success and continuance is assured.

We will have here with us on June 10th some especially interesting lecturers, with mighty interesting talks:

L. C. Sammons, M. D., of Shelbyville, Indiana, will deliver an address on:
Physiotherapy in General Office Practice . . . 10 to 11 A. M.

Gustav Kolischer, M. D., of Chicago
Principles of Medical Diathermy . . . 11 to 12 Noon

L. A. Bolling, M. D., of LaFayette, Indiana
Physiotherapy in Orthopedics . . . 1:30 to 2:30 P. M.

Frederick H. Morse, M. D., of Boston, Mass.
The Comparative Value of Galvanism and Diathermy
. . . 2:30 to 3:30 P. M.

Burton B. Grover, M. D., of Colorado Springs, Colo.
Blood Pressure . . . 3:30 to 4:30 P. M.

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.

We have ample space for all of you. Remember the date and come to our Lecture and Demonstrating Rooms at

**2335 WABANSIA AVENUE
CHICAGO**

H. G. FISCHER & CO., Inc., Phone Armitage 0323

putting the patient to bed and applying the ice-bag to the lower abdomen. If the pain is severe, it can be controlled by a small dose of morphine.

Dr. Stanton mentioned using the urethral electrode with the thermometer attached. Such an electrode is illustrated and described on pages 112 and 113 of Dr. Sampson's "Physiotherapy Technic." A number of physicians have reported splendid results obtained by introducing high frequency electrodes inside the cervix, but, in my hands, all treatments requiring the introduction of instruments or medicines inside the uterine canal have been failures. I believe that the condition is invariably aggravated by such treatment, and I have abandoned it entirely.

There is a definite reason why such treatments are not successful. One of the fundamental laws of medicine is to place all inflamed parts at rest, and, the slightest irritation to the uterine mucosa will set up uterine contractions, produce an excess of secretion, and, in that way, off-set the very results that we hope to attain. I have lately tried out the bismuth paste injections advocated by Hollender for chronic endocervicitis, but with mediocre results. The introduction of electrodes into the cervical canal is a bad practice and should not be done except in a few rare conditions. In case of pregnancy, it invariably results in an abortion, and almost all inflammatory conditions are aggravated instead of benefited by the treatment.

I have attempted to give in a general way, the technic employed in this clinic in the treatment of endocervicitis. The same technic may also be employed in the treatment of vaginitis, endometritis, and in selected cases of salpingitis. It is impossible, of course, to cover the field entirely in a communication of this kind, but I will be glad to answer any further questions that Dr. Stanton may care to ask, and will favor you with a more elaborate discussion at a later date if you care for it.

Very sincerely,
(Signed) W. B. CHAPMAN, M. D.
Carthage, Mo.

Lloyd B. Foster, M. D., of Walters, Okla., writes at length in "The Medical Herald and Physiotherapist" on the treatment of stricture of the esophagus.

He mentions a case, woman of 28. "Under the fluoroscope, using an opaque meal, after one glass of the material had been taken, there was a slight bulging of the esophagus in the region of the diaphragm with an apparent stricture which was very smooth in outline and I was unable to detect any evidence of external pressure that would produce such a deformity. At this time I was unable to detect any Barium in the stomach, but after about five minutes saw the Barium making its way through the stricture on towards the stomach which was very low. The stomach was found to lie in the pelvis, that is the lesser curvature being slightly below the anterior superior of the ilium and the greater curvature seems to lie at the very lowest point in the pelvis that it could obtain. Patient was given atrophine sulphate hypo, but this did not relax the stricture. Pressure made upwards on the stomach and to our satisfaction found out that by this means the stricture relaxed and the Barium came through.

Diagnosis:

1. Gastro-optosis marked.
2. Functional stricture of the Esophagus.
3. Psycho-neurosis.

Treatment: Put the patient to bed, elevating the foot of the bed about 18 inches, put her on a liquid and semi-solid diet with forced feeding. Gave bromide sodium and tr. belladonnae; kept bowels open with enemas; after four weeks of this treatment I found that while she had not gained any in weight, she had not lost any, but I could see no improvement.

I began to use Diathermy, placing a five-inch electrode on the back at the fifth dorsal and a three-inch electrode over the lower end of the sternum and using between 900 and

1,000 M. A. for 15 to 20 minutes each day. The first treatment was given about 4 P. M. and the patient retained all her supper that evening and has been improving and gaining in weight with only an occasional regurgitation of food, and I believe that Diathermy accomplished more in this case in one week than any other treatment could possibly have done.

Try this same treatment in the next stubborn case of hiccoughs and you will be surprised how quickly it will stop them."

The Rational Treatment of Facial Paralysis

By William Martin, M. D., Atlantic City

* * * If we think of a Neuritis in the terms of an inflammation of a more or less active type, we can see how the inevitable inflammatory exudate or infiltrate must be deposited along the nerve within its sheath and contiguous tissues. If we also consider the bony canal through which the nerve passes and the parts of the head to which it is distributed, we can readily see just what even a small deposit of exudate at just the right spot will do by cutting off the nerve cell nutrition and impulses, and naturally the effects are felt at all or most of the areas of distribution.

One point of selection appears to be at its exit at the stylo-mastoid foramen, and here a small deposit of exudate will quickly produce the paralysis. As the bony canal does not yield to such deposits, and being so narrow, it would follow also that such infiltrate at any point within this canal would bring about the same effect. The amount of paralysis will largely depend upon the amount of infiltrate, although this cannot be considered as absolute.

Granting that we have an infection, tooth, tonsillar or whatever, we will find a circulatory stasis and nerve irritation

which becomes an inflammation with the tendency to deposits of exudate. This may be slight at first, not sufficient to cause pressure, but let the person be exposed to some sudden chill of the face as a cold draft, and the inflammation becomes at once active and the deposit will be rapidly increased with the sudden appearance of the paralysis. It just needed this "last straw" to bring this on, and naturally it would be presumed that the draft really did the work, when only it was a contributing factor. In some cases of sudden paralysis there may be simply a congestive condition, the result of a mild infection, and the paralysis in this case would be from the usual swelling of the tissues. These are the cases that restore spontaneously without treatment. A recurrence will probably cause the inflammatory type with less tendency toward restoration.

* * * Neglect of early attention may be the cause of contractures that will be difficult to overcome. If possible to institute the treatment the very day of its occurrence, the better off the patient will be. The writer recognizes that this is contrary to the accepted teaching of neurologists the world over from time immemorial, for it has been thought that the "do nothing" treatment was the only thing until at least two weeks had elapsed and then *electricity might be tried*.

Wait until degenerative changes have started and then try to stop them by electricity! Think of it! Allow degeneration to start instead of preventing such an occurrence, and yet prevention is absolutely possible if the proper care is used. Continuous pressure upon a nerve trunk sufficient to cause pressure paralysis will not be overcome by allowing it to continue, but rather the tendency is to increase through additional deposits and become steadily worse. With this increased pressure degeneration must ensue after a time and muscle atrophy be the result. Almost every physician has seen these cases which are the natural result of such teaching. The time has come to call a halt to this.

What is the reason for this lack of proper teaching of modern Electro-therapy? Is it prejudice or is it indifference to anything that does not savor of the old-time thought? Surely we must do everything within our power to relieve and restore suffering humanity—else we are not true physicians. If we are in earnest about giving our best, we must look into modern methods; * * *

What is the rational treatment of this condition? The answer is, early treatment, the earlier the better, by modern methods of application of electrical currents or other physical methods in combination with them. Hyperemia is one of Nature's methods of restoration, therefore we aim to produce it in these early cases, and this can be done by the use of several measures. This activity of the circulation will reduce congestion and absorb the soft exudate, and may be all that will be necessary in light cases.

For this purpose we may use radiant light and heat, the properly hooded high candle power lamp being placed over the face at a distance that will produce active hyperemia without burning, and this treatment may be given two or three times daily for a considerable length of time, this being a matter of judgment.

In some cases of longer standing in which a more accurate hyperemia of a deeper nature may be desired, we have Diathermy, with which most physicians are now familiar. One electrode should be applied to the area covering the exit and main part of the nerve distribution, with the other upon the opposite side of the face, using a moderate amount of current, and watching its effect. Properly used there need be no untoward effects.

(Extract from *The American Physician*)

□ □ □

"Diathermy is practicable in all instances in which heat produced within the tissues of the human body appears to be desirable as a therapeutic factor.

This item of generating the heat within the tissues is the Paramount advantage of Diathermy over any other method."

Gustav Kolischer, M. D.

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Just supposing we could have a nice cover made up that would not cost over a dollar and a half; would you want one, or not?

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A New Auto-Condensation Couch Pad

A well made, durable pad of black DuPont Fabrikoid material, measuring 22 inches wide by 62 inches long. The insulating material over the center electrode plate is of oiled silk and wool felt. The entire pad is about $\frac{3}{4}$ inch thick, and is designed for machines of medium voltage D'Arsonval output, as for example the Fischer Type "G" Diathermy unit.



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A PAGE OF FUN



Grandmother: "My dear boy, you've grown to be the living image of your father. You have your father's eyes, you have his nose, you have his mouth, and—"

Jimmy (gloomily): "Yes, and I have his trousers, too!"

□ □ □

"Daughter, doesn't that young man know how to say good night?"

"Oh! I'll say he does!"

□ □ □

"What did he die of, Mrs. Malone?"

"Gangrene, Mrs. Flannigan."

"Well, thank Hivin for the color, Mrs. Malone."

□ □ □

"Pa, where was Babe Ruth born?"

"Couldn't tell you, son."

"Where was Jack Dempsey born?"

"Don't know that, either."

"Pa will you buy me a history of the United States?"

Little Jane: "Mother, if baby was to swallow a goldfish, would he be able to swim like one?"

Mother: "Oh, my heavens, no, child! It would kill him!"

Little Jane: "But it didn't."

□ □ □

Affable Clergyman (pinching a little boy's bare leg): "Who's got nice, round chubby legs?"

Little Boy: "Mama."

□ □ □

Professor: "Who was the greatest inventor?"

Student: "An Irishman named Pat Pending."

LUCK MEANS THE HARDSHIPS AND PRIVATIONS WHICH YOU HAVE NOT HESITATED TO ENDURE; THE FAITHFUL HOURS YOU HAVE DEVOTED TO WORK; THE APPOINTMENTS YOU HAVE NEVER FAILED TO KEEP AND THE TRAINS YOU HAVE NEVER FAILED TO CATCH.

FISCHER'S MAGAZINE



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357

JUNE, 1924

SMILE at your troubles to-day and you will laugh at them tomorrow.

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. II

JUNE, 1924

No. 8

Physical Therapy in the Specialties

A month or two ago we drew attention to the growing tendency in ophthalmology and oto-laryngology to relinquish their character of surgical specialties and to assume their rightful role as specialties of medicine, in which surgery is to be regarded, as it is regarded in relation to medicine at large, as an emergency measure, a sort of *dernier ressort*. Ophthalmologists and oto-laryngologists are nowadays much more concerned with the functional conservation of the organs with which they deal, and with their systemic relationships than with the perfection of operative procedures; and palliative and ameliorative measures bulk much more largely in their treatment than it ever did before in the history of the specialties.

It is interesting and suggestive to note how increasingly important a part physical therapy is playing in this trend. We would not care to go so far as to assert that the recent rapid development of physical therapy is responsible for the departure, but there can be little doubt that the possibilities offered by these modes of treatment—now for the first time being developed in the capable hands of high-grade men—make the departure practicable. Under the older system of medicine the resources of the eye, ear, nose and throat specialist for curative treatment were exceedingly meager

and limited. Physical modalities have already added sensibly to these available resources, and the promise that they hold out for the future is many times greater.

One has but to glance over the contents of our own and other magazines devoted to the interests of ophthalmology and oto-laryngology to observe the steady increase of attention that is being paid to physical modes of therapy. The current literature of the specialties becomes more and more plentifully sprinkled with contributions on the subject, voicing a growing confidence in its clinical value. We would be the last to indulge in or to incite an over-enthusiastic attitude toward new and comparatively little-tried methods. Conservatism must always characterize the scientific man. But we cannot avoid the conviction that, in the hands of the men who are now developing it, physical therapy is destined to play a significant part in eye, ear, nose and throat work, and we shall watch with interest, and further as much as we consistently can, the sober discussion by which its claims must be established or disproved.

E. E. N. and T. Jour.

Physiotherapy in Orthopedics

By LOUIS A. BOLLING, M. D.
LaFayette, Ind.

In briefly sketching certain observations made under two government services—first two years in Orthopedics in the late war, and a year and a half recently in Physiotherapy in Washington and Baltimore for the Veterans Bureau, I am summarizing the work of other men more than my own. Furthermore, I wish to be understood as using both terms in the title in their broader significance.

With little limit to equipment and that, too, under direction of experienced officers, with trained aides, and with fair cooperation from ranking officers and staff in general, conditions were favorable for good work. The weak link being the subject, the patient—the ex-service man. In the first

service his cooperation was good. By the time the second service reached him numerous influences had broken down his morale, and had started him on a career of never-ending complaint, in short a patient for life. We have nothing in civilian practice analogous to this except State Compensation cases. More on this later.

In a broad sense Physiotherapy is ideal for most post operative and hospital cases, and so its range of usefulness here noted, applies in general civilian work.

As a follow-up for impaired muscles and nerves, ill-functioning joints—long confined in casts, splints or dressings, we had recourse to Hydrotherapy, Mechanotherapy, Diathermy, Massage, Bristow Coil, etc., to hasten reparative processes, break up fine, fibrous bands of *adhesions*, and stretch tendon, ligament and muscle back into normal relations.

Results in this immobilization type, without much tissue destruction, were uniformly good. Peripheral Nerve lesions, bone grafts and tendon transplants, when released from fixation and reparative processes, received frequent, gentle massage, active and passive exercises graduated under guidance. Later they were given increasing stimulation through various modalities—the Sine Wave, Bristow Coil, Morse Wave and others. Sensitive stumps from *Neuroma* or abrasions from artificial limb, Arthritis, Neuritis, Myositis and kindred affections fall within the range of Hydrotherapy, Heliotherapy, Diathermy, etc. Septic conditions of bones and soft parts, usually evidenced by discharging sinuses—once sequestrum is excluded by the X-Ray, are favorably met by Heliotherapy, both local and general.

All types of foot strain come within the range of possibilities for relief or improvement with various modalities in Physical Therapy; Diathermy, Whirlpool Bath, Mechanotherapy, Sine Wave, Massage and active exercises.

The temporary Orthopedic expedients for support are secondary to the measures above for restoration of weight

bearing balance, tone to muscle, tendon and ligament, with correction of gait, posture and footwear.

Sacro-iliacs, that nightmare of the physician! Once the X-Ray excludes Hypertrophic arthritis or some anomalous type of vertebral process, we may by combined Physiotherapy and Orthopedic means of support afford relief of symptoms and eventual discarding of support with cure.

This Neurosis was a pitfall in the Veterans Bureau Service. Some of the most rebellious cases were without history of trauma. Every recognized means of treatment and support were tried out on some, often to no avail. Among these were cases drawing liberal compensation and were doubtless frank "Gold brickers."

Scar tissue under ionization, whirlpool bath and massage almost uniformly improved. In using irradiation about scar tissue it is well to be mindful of its low vitality and readiness towards burns. Bursitis, both the simple form and that complicated by calcareous deposits often show brilliant results after Diathermy and graduated Mechano-therapy.

Neurasthenia, Psychasthenia and other unstable nervous conditions associated with any of the foregoing, can often be controlled or improved by judicious use of auto-condensation and "Tonic Hydro."

If we hope to gain a standing in Physiotherapy in referred industrial work, we will get it by two routes only—one corollary to the other. First, that it offers advantages and is superior to other means or methods in time and results, bearing in mind that the paramount consideration in the latter is *function*. Second, that it is profitable to the corporation or party paying to secure it.

If we shorten convalescence from a surgical trauma by two weeks with Physiotherapy and our charges balance or exceed two weeks more of compensation while patient is getting our treatment, I fear we are not destined for a big industrial clinic of referred stuff. The desideratum is to

make it profitable both to ourselves and the other fellow. Then business will come and our work become popularized to the end of being demanded. Can we attain this goal?

Finally, in any well regulated Physiotherapy Clinic today—private or hospital, I would insist on certain gymnasium features for developmental and corrective work. It need not be elaborate in apparatus. A small phonograph with a few good exercises under a little personal guidance may serve as your assistant in this oftentimes. Not all our clientele get out often to the links. Furthermore the stout adult or physical misfit of a youth who most need it recognizes his or her handicap and avoid public games. In our efforts to repair this human machine by simple, physical means let us not forget the lesson of the late war, namely our astounding high per cent of physically unfit. If we elect to help checkmate this evil by incorporating corrective measures as a logical part of our work—we may give it a standing with other departments in medicine second only to that of Preventive Medicine and Hygiene.

Progress in Orthopedic Surgery

Diathermy in Acute Poliomyelitis

Picard¹ calls attention to Wickmann's pathologic report concerning the important role which the edema of the meningeal structures plays in the pathologic and anatomic picture of poliomyelitis. Wickmann and Preiser believe that it is to a great extent due to this edema that the ganglion cells are affected and destroyed. The selection of certain parts of the spinal cord, especially the cervical and lumbar enlargement, may thus be explained on mechanical grounds. Preiser has advised performing a laminectomy in such cases, but few surgeons are willing to follow this advice owing to its considerable danger and uncertain therapeutic value. Picard has become convinced of the value of diathermy in reducing this edema. He uses two forms of application, the transverse for local lesions and the longitudinal for diffuse processes. He reports ten cases, seven of them of three or

four weeks' duration, two of seven weeks' and one of four and one-half months'. The author thinks that the immediate improvement setting in after a few treatments can be explained only by the beneficial influence of the diathermia on the pathologic processes going on in the meningeal structures. Picard recommends the method warmly, but with all reservation in regard to its mode of action, and confesses he has no scientific explanation of the apparently beneficial effect.

Bergamini² states that during the 1921 epidemic of poliomyelitis at Modena, Bordier's method of treatment was applied on an extensive scale, with encouraging results. This method comprises roentgen-ray exposure and diathermy, applied to the paralyzed limb to stimulate the circulation and initiate repair by electrotherapy. Its purpose is also to combat the later atrophy of the paralyzed muscle. It has been established that *a chilled normal muscle may simulate the reaction of degeneration, the same muscle when warm reacting normally*. This combined treatment was employed as soon as the subacute phenomena has subsided. Sixteen cases are described in detail, the ages of the patients ranging from 5 months to 6 years. Four of the children were practically cured; eight were decidedly improved and two only moderately. The two others failed to complete the course. The benefit seemed in direct ratio to the promptness with which treatment was begun. The best effects were realized when the time that had elapsed since the onset of the paralysis was not more than twenty or thirty days. The roentgenotherapy consisted of three sittings on consecutive days each month, exposing the site of the spinal cord in the lumbar or cervical region, depending on whether the arms or legs were affected. The dose each time was about 6 X units. The diathermy was applied in four or five ten-minute sittings in each series, with a 500 or 600 milli-ampere current. A month generally sufficed to overcome the hypothermia and bring the limb to an approximately normal temperature. It was then ready for the third part of the treatment, namely, rhythmical galvanization, to the

paralyzed muscles. Twenty daily sittings of from fifteen to twenty minutes were followed by thirty or forty days of rest. The current should not be over 3 or 4 milliamperes, but this electrotherapy should be kept up perseveringly for months and years if necessary. Considerable improvement had been obtained even when the reaction of degeneration was complete. This Bordier method conflicts with the old doctrine of immobilizing the limb, but Bergamini says that its success is unquestionable in poliomyelitis, whatever the patient's age, when applied before lesions have become irreparable.

1 Pickard, H.: Deutsch. med. Wchnschr. 49:13-15 (Jan. 5) 1923.

2 Bergamini, M.: Arch. de med. d. enf. 26:521 (Sept.) 1923.

(Ann. of Surg.)

Diathermy in Joint Injuries

HYDE WEST, M. D., F. A. C. S.
Surgeon, C. & N. W., Woodstock, Ill.

In presenting this paper it is not done so much with the idea of bringing forth anything new or original as it is to call the attention of the profession to a most valuable adjunct in the treatment of joint injuries. First let me say that diathermy is a name given to a high frequency current produced by a transformer of high voltage and low amperage and has been recognized for a number of years by physiotherapists as a current of much benefit in various diseased conditions, but it has only been recently that the manufacturers have produced machines simple of operation yet powerful enough to stand up under hard usage and free from the objection of sparking either operator or patient. Electrodes also have been produced which greatly aid in the use of this current.

The machine used by the writer is a standard make operating off a 110-volt alternating commercial current, yet I believe a machine operating off a 220-volt current would be superior unless a stabilizer is installed to produce a steady flow of current.

By the use of diathermy heat is transmitted to the affected tissues without burning the cutaneous surface. This is accomplished by placing two electrodes made of zinc, nickel plate or block tin on opposite sides of the part to be treated and properly moulded to fit the surface. The effect produced is a non-inflammatory reaction stimulating the capillaries and lymph vessels, thereby producing absorption of tissue waste, blood clot and even the products of calcification.

The diseased conditions to which this form of treatment is especially adaptable are sprains, fractures near joints where damage is almost always sure to occur to the ligaments and soft structures, the various bursitis, Harris, of New York, reporting 80% of cures of subacromial bursitis, many cases with calcareous deposits. Although I have not attempted to make use of this method in the treatment of fractures of long bones, I see no reason why it should not be successfully used as a relief of pain and to produce absorption of exudates, especially where there is much damage to the soft tissues. Care should be taken to see that the part to be treated lies directly between the two electrodes. The average treatment consists of 500 to 1,000 milliamperes for 15 to 20 minutes and given every day for the first few treatments and then two or three times a week.

I herewith report several cases showing its applicability:

Case I.—I. B., a woman age 59 years, presented herself complaining of a swelling around right shoulder, associated with moderate pain, tenderness and inability to abduct the arm. She could not remember injuring the part. X-ray revealed a cloudy shadow over acromioclavicular articulation. Six treatments, at first every other day and then every third day, entirely produced mobility.

Case II.—J. B., age 38 years, dislocation of shoulder. Treated by reduction and immobilization for one week. Then passive motion with diathermy every third day. Perfect use of arm in four weeks.

(Continued on page 10)

Program for Our Physiotherapeutic Meeting

Monday, July 14th, 1924

We will have with us:

W. B. CHAPMAN, M. D., of Carthage, Mo.,
"Diathermy in the Treatment of Endometritis and Endocervicitis." 10:00 to 11:00 A. M.

MILES J. BREUER, M. D., of Lincoln, Nebr.,
"Medical Diathermy in General Office Practice". 11:00 to 12 noon.

The afternoon from 1:30 to 4:00 P. M. will again be spent at the Cook County Hospital, Harrison and Wood Streets, Chicago.

D. KOBAC, M. D., will exhibit cases, therapeutic measures and the various technics employed in the work of that institution. This is a wonderful opportunity, and as the last trip to this hospital was so very enjoyable, we hope you will take advantage this time.

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.

We have ample space for all of you. Remember the date and come to our Lecture and Demonstrating Rooms at

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Case III.—J. K., age 63 years, carpenter, struck back of elbow joint, developing a severe inflammation of the olecranon bursa. Consulted me one week later. Bursa full, inflamed and very tender. Relief of pressure afforded by aspiration of 4 c.c. of serous fluid. Four treatments given daily reduced the swelling and inflammation, the bursa appearing almost normal. The man then returned to his home in nearby city.

Case IV.—A. P., age 60, farmer; subacromial bursitis of six months' standing. Massage and application of liniments with internal medication having proved of no avail. Six treatments twice weekly reduced pain so man could sleep and was able to dress himself, motility improved but far from normal when he stopped the treatments. This case was severe and should have received daily treatments for first week, then three and two weekly for four to six weeks, but could not afford the time to come daily, and as soon as he was able to do his work again he discontinued coming. In this case no definite injury could be found as a cause. The man had badly infected tonsils which he was advised to have removed.

Conclusion.—Diathermy offers a most useful means of combatting pain and is a wonderful aid in restoring function in disease or injury of joints. It is painless and easy of application. No surgeon or institution treating industrial cases can afford to be without the necessary apparatus for the production of this current.

Reference: Harris—*Jour. A. M. A.*, July 13, 1923.

Diathermia in the Treatment of Sterility

C. A. CASTANO and J. F. M. GOMEZ
La Riforma Medica, August 13, 1923

Women affected with genital hypoplasia always give a history of irregular puberty, either precocious or delayed,

with profuse menstruation, periods of amenorrhea, menstrual pain, mucous leucorrhea, general malaise, headaches, gastric and intestinal disorders, various muscular pains and nervousness. Such girls are hysterical, neuropathic, sometimes hypersensitive, sometimes apathetic, subject to crises of pelvic, of uteroovarian congestion, to insomnia, and so on. A puberty so stormy is the forerunner of a genital life constantly disturbed by congestion epochs and general commotions of a nervous character.

Thorough examination of such girls, destined to be sterile women, discloses various stigmata of heredolues, such as congenital mitroaortitis, vascular and circulatory alterations, and skeletal dystrophy, while inspection of the genitals distinctly reveals the origin of all these changes in maternal syphilis. Recognition and early treatment of this condition of genital hypoplasia consequent of hereditary syphilis makes possible the avoidance of faulty sexual development and of the resulting sterility.

In order to remedy the uterine hypoplasia, the sclerosed ovaries, and the sclerocystic ovaritis produced by hereditary syphilis, antiluetic treatment must therefore be conjoined with local measures, among which diathermia stands first. Diathermia favors development of the infantile uterus by provoking active hyperemia and in this way stimulating the nutrition of the tissues and quickening intracellular chemical reaction. The application is made by means of two large plates of composition metal, serving as the indifferent electrode, upon the back and abdomen and connected together, and in the vagina a metallic stem electrode adapted to the size of the passage. The current strength should begin at one to one and a half amperes and may be raised to two and a half, seldom more, the duration of a sitting being from three to forty-five minutes. The authors usually allow a month's interval after twenty treatments, and these are always suspended during menstruation. They succeeded in all of the ten cases treated in increasing the size of the uterine cavity and in bringing about regular menstruation.

Electro-coagulation as a Destructive Agent

By T. HOWARD PLANK, M. D.
Chicago, Illinois

The high frequency currents are so well known to this body that it would be a waste of time to discuss them. Their use as a destructive agent in confined to the d'Arsonval current for the coagulation of large masses of soft tissue, and for the destruction of bones, and usually for cavities because of its greater adaptability and the ease with which it can be insulated.

Desiccation is confined almost entirely to the Oudin current and it is particularly adaptable to the treatment of small surface lesions where it is important not to leave large scars. This is especially true about the eyes, nose, and face. If desirable the epidermis may be removed without damage to the dermal layer of the integument which means without scarring. It is the current of choice for small growths as warts and moles (especially the brown moles of children), and for senile keratosis and caruncles.

The d'Arsonval current lends itself readily to the treatment of mouth, bladder, rectal, and vaginal diseases because of the ease with which it can be insulated provided the current is properly balanced in frequency, amperage, and voltage. Its use through the cystoscope is both reasonable and desirable for growths not larger than a fifty cent piece. For larger growths, it is best to work through suprapubic opening. For the vaginal and rectal cases, one should work through tipped, tubular glass specula of sufficient diameter and length to reach the growth easily. Aluminum needle applicators are most pliable, do not corrode, and are reasonable in price hence are used for this work.

A good hard rubber handle without metal surface, a light-weight flexible conducting cord, and a low quick-acting foot switch are all absolute necessities.

For mouth, throat, and tongue work, we use the d'Arsonval current with the same general equipment as for rectal and vaginal cases except that a Jennings' mouth gag is used in place of glass specula which with a catgut guy through the tongue, a wooden tongue depressor and the operator's fingers as retractors, complete the necessary outfit for doing thorough work. A good light is always essential. This may be a head-lamp, a reflected light, or direct lighting from a stand lamp. Each has its place and is desirable at times, therefore should be at hand.

For local anesthesia I use procaine or anesthane in 2 per cent solution or butyn in 0.5 to 1 per cent solution. The latter is of instantaneous action hence requires no waiting. For large growths where a general anesthetic is required, I use $\frac{1}{4}$ grain of morphine and 1-100 grain of hyosine hypodermatically one and one-half hours before operating repeating this same dose three-fourths of an hour later. This is for the average adult in average health. No bad results have come from its use. We have used this anesthetic on patients from sixteen to eighty-two years of age using only one dose in the age extremes and that one-half hour before operating.

For the destruction of soft tissues in the smaller lesions up to the size of a half dollar, we use about 700 milliamperes: for the larger rectal and in vaginal cases from 1,500 to 2,500 milliamperes. Where it is necessary to destroy bone tissue, I first destroy and remove the periosteum then place the point of the needle against the bone using about 1,500 milliamperes for a sufficient length of time to cause the bone to become incandescent. The destroyed bone is not removed at this time but is allowed to separate by natural processes which takes about three months. Soft tissue sloughs are loosened naturally in about two or three weeks.

Reasons for using the high-frequency currents: (1) When used, operations are bloodless. (2) Much less time is required. (3) There is very little shock. (4) There is a minimum of trauma. (5) The danger of metastasis is reduced.

to a minimum. (6) Post-operatively there is very little pain, reaction, edema, or toxemia. (7) Resulting scars are soft and pliable. (8) There is perfect control to an area as small as a needle point. (9) Results are better than with cutting operations.

(*Am. Jour. Elect. and Rad.*)

□ □ □

Physiotherapeutic Lecture Course

By MEL R. WAGGONER, M. D.
Cedar Rapids, Iowa

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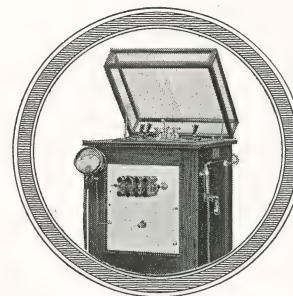
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A PAGE OF FUN



A Japanese Life Insurance Salesman at Los Angeles was asked to explain his splendid success.

"I go out into the country in my little car," he said.

"I see Japanese boy in field.

"I say, 'Come here.'

"I say, 'You carry life insurance policy?'

"He say, 'No.'

"I say, 'You damfool, sign here'."

□ □ □

Father: "How is it, young man, that I find you kissing my daughter? How is it, young man?"

The Lizard: "Great! Great!"

□ □ □

A window sign on Market Street, St. Louis—

Dr. Alexander
Treats all diseases
including children.

(Query: is Diathermy indicated?)

□ □ □

She: "What are you thinking about?"

He: "Same thing you are."

She: "Don't you dare move,"

A little girl who is just learning to read short words takes great interest in the big letters she sees in the newspapers. The other evening after she had kept her mother awake half the night reading advertisements to her, she knelt down to say her prayers:

"Dear Lord," she lisped, "make me pure." Then she hesitated and went on with added fervor, "Make me absolutely pure like baking powder!"

□ □ □

She: "I can tell a lady by the way she dresses. Can't you?"

He: "I never watched one dress."

PESSIMISTS are always in the rear and never in the van in the march of progress. Your successful men and women are never chronic grumblers.

—Bishop Samuel Fallows

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Physiotheraputists of all time!**

**Clinics, lectures, demonstrations
of technic, by nationally known
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**Arrange immediately that dates
OCTOBER 20th to 24th inclusive
be set aside for this occasion.**

More complete announcement, with
complete program will follow in sub-
sequent issues of this paper.

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358

JULY, 1924

Loyalty—

**If put to the pinch,
an ounce of loyalty
is worth a pound of
cleverness.**

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. II

JULY, 1924

No. 9

The Precision of Physical Therapy

One of the specific reasons why surgery superseded therapeutics and almost elbowed it out of the arena was the superior accuracy of method and clean-cut results of the one as compared with the relatively uncertain, hit-or-miss character of the other. Medicine fired grape-shot from a blunderbuss; surgery performed accurate target-practice with a carefully-sighted rifle. Small wonder that profession and public turned impatiently from the vagueness of the one to the precision of the other.

This specific quality of precision and constancy, both in method and in result, has now passed again into the hands of medicine with the development of physical therapy. The electro-therapist knows, to the fraction of a degree, the strength of his current, and the path it will take; he can gauge its volume to the thousandth of an ampere; he can generate heat to or beyond the physiological limit; and in most instances he can know exactly what his treatment is accomplishing. Where, in other phases of medicine, or in surgery either for that matter, is such calculation possible? Compare the exactness of electro-therapeutic or radio-therapeutic applications to the uncertainty attending the average application of drugs.

This is but one of the qualities which gives to physical therapy the promise of a far-reaching usefulness in the medicine of the future. But it is a most important quality, and one which at once commends physical therapy to the modern

scientific physician, who, above all, demands accuracy and precision in the weapons that he employs.

While it is true that physical therapy, in its various modalities, constitutes, in a sense, a special form of treatment, and its technical development is necessarily in the hands of a specialized group of men, yet it is not, and must not be regarded as, a specialty of medicine in the sense that ophthalmology, or urology, or neurology, or similar branches of practice, are specialties. It is a mode of therapy for use in **every** department of medical practice in which, and to the extent to which, it is applicable. And from all appearances it promises to be applicable more widely and to a larger degree than almost any other mode of therapy.

There is not a physician in the entire profession from the general practitioner to the most exclusive specialist in the most specialized branch of medicine or surgery, but is interested in physical therapy, and will find it an invaluable (and ultimately an indispensable) aid in the cure and relief of his patients. This is, in fact, being universally recognized.

Amer. Journal of Physical Therapy

□ □ □

Suggestions for the Treatment of Pulmonary Tuberculosis by the Ultra-Violet Ray

W. B. CHAPMAN, M. D., Carthage, Missouri

During the past few months I have been receiving an increasing number of inquiries relative to the use of the actinic or ultra-violet ray in the treatment of pulmonary tuberculosis. Most of these are from physicians who merely want to know how long and intensive the treatments should be, how often repeated, and how long continued. A few even ask what fee to charge. Many of these inquiries seem foolish, but I always answer them to the best of my ability.

During the past fourteen months I have treated some hundred cases of pulmonary tuberculosis in all stages, and must truthfully say that there is no procedure that will apply in all cases. Some of these patients absorb huge quantities of the ray almost from the beginning, while others burn quite readily and must be built up gradually. Brunettes, as a rule, have a greater tolerance for the ray than blondes. Our rule is to expose the patient about ten minutes, front and back, to the deep therapy lamp before turning on the ultra-violet ray. This dilates the capillaries of the skin, causes the patient to perspire profusely, and, we believe, places the skin in a more receptive condition to receive the ultra-violet treatment. In the summer, when the patient is very warm already, this part of the treatment may be omitted. After using the deep therapy lamp, we dry the skin by a somewhat vigorous rub with a Turkish towel before using the ultra-violet. We believe this also helps by bringing still more blood to the surface.

In using the ultra-violet or actinic ray, we begin by raying the trunk and limbs at a thirty-inch distance, giving one minute for blondes and two for brunettes the first day, and increasing a minute each day until we reach ten minutes. We then decrease the distance of the arc from the patient about two inches each day until we reach fifteen inches. Sampson contends that the treatments should be extended to thirty minutes or more, but, where it is necessary to handle a large number of patients each day this is not practical. Furthermore, I have failed to secure better results from giving the long treatments. I have also read where it was considered an advantage to begin by raying, first the feet, then the legs below the knee, etc., gradually working over the entire body. I consider this technic impractical and without scientific foundation. It merely delays the results that one should hope to obtain. Whenever possible, these treatments should be given daily except in the presence of a marked skin reaction, when the treatments should be discontinued until the erythema subsides. Patients that are

able to carry on their daily work, usually prefer to come about three times a week, and improve nicely when they come regularly. I have found from one to three months the average time necessary to arrest a case of pulmonary tuberculosis depending on the severity of the case.

Occasionally I receive a communication from some physician who does not feel that he is obtaining the results that he should expect. And on inquiry, I usually find that he is either careless in his technic or neglectful of his patients. These machines are constructed for one purpose only and that is to produce ultra-violet energy, and, beneficial as the ray has proved to be when used properly, it requires more than an inexperienced office girl to treat these patients and obtain satisfactory results. I am sorry to say that I have met a few physicians who think the only use of the machine is to extract a few dollars each day from some poor unfortunate, and turn the treatments over to the office girl with instructions to give them five or ten minutes under the actinic lamp and tell them to come back tomorrow for another treatment. I consider such a procedure criminal on the part of the physician. These patients should be examined daily, the proper medicines prescribed, the diet regulated, and minute instructions given relative to hours of rest, bathing, exercise, clothing, and everything that will tend to a successful issue.

Patients with advanced tuberculosis often become sick and cough and expectorate freely during the treatments. They also emit a disagreeable odor which is diagnostic of the condition and quite pronounced when the patient perspires freely. This odor is kept down only by scrupulous cleanliness on the part of the patient. It is undoubtedly caused by the throwing off of toxic material by the skin.

While I consider the ultra-violet lamp as nearly fool-proof as any modality that we employ in the laboratory, it requires more than merely turning it on for a few minutes and then turning it off to secure satisfactory results. Even where our instructions are explicit, I find that the improvement of the

patient is influenced quite markedly by the training and experience of the technician giving the treatments. Frequently patients drive the eighteen miles that separate our laboratories on days that I am at one or the other because they claim that they improve more rapidly when I give them my personal attention. I also notice that the old patients invariably request the services of the more experienced technicians. As stated above, it requires more than exposing the patients to the ultra-violet ray to obtain satisfactory results, and it is only where the physician studies his cases individually and checks his results carefully that the maximum of success will be acquired. (This same rule will apply to all other branches of medicine.) Ultra-violet energy is not a specific for tuberculosis, but is merely another asset to our armamentarium for carrying on the war against this dread disease. However, I consider it the most valuable contribution of late years, and hope to see it used universally within the near future.

This splendid article will be continued in the September issue.

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Massage and Indirect Diathermy in Fractures

We notice four very splendid paragraphs in the "P. T. Review" on the above, which we take pleasure in reprinting for you, herewith.

"When a bone is broken the surrounding structures are injured also. Rigid fixation by splints or plaster without physiotherapy withholds from these structures the treatment by which repair can be accomplished, and thus we have added to the original injury, adhesions and atrophy of disuse.

"Massage and indirect Diathermy in the first stage of a fracture hastens the absorption of the hematoma and injured tissue cells, and improves the metabolism of the injured parts. Thus it diminishes the pain and

lessens the muscle contraction and consequently aids in the reduction and retention of the fragments. Fixation and rest diminish the blood supply, hence do not aid in the above.

"Joint motion in a limb where there is a fracture prevents joint stiffness and muscle atrophy. This mobilization does not tend to disturb the alignment of the fragments, unless the conditions are such that an open operation is necessary to restore the fragments to proper position.

"With massage, electrical muscle stimulation and joint motion, muscle atrophy and joint stiffness are prevented and the limb is ready for use when there is union. With complete immobilization there is marked muscle atrophy and joint stiffness and we get the result of a good union but a marked permanent disability from stiff joints."

□ □ □

Treatment of Hypertrophy of the Prostate by X-Ray and Physiotherapy

By ORREN W. WYATT, M. D.
Manning, Iowa

The author describes symptoms, histories, examination and treatment very clearly, and says in part that the conditions found are so variable that it is difficult to describe the many types that may be found.

Where the involvement extends beyond the prostate, malignancy should be suspected. The differential diagnosis between benign and malignant prostatic disease is usually very easy in the latter stages in which the seminal vesicles, glands, perirectal and other pelvic structures are extensively involved. The early stages are more difficult to diagnose. Marked induration should always make one think of the possibility of cancer, and if this is of stony hardness, a positive diagnosis can usually be made.

In cases where a positive diagnosis cannot be made a roentgen ray cancer dose should be advised, and operative measures considered if it does not respond to the X-ray in a few weeks.

Cases of benign hypertrophy associated with marked chronic prostatitis, and especially with concretions and small calculi, are sometimes difficult to differentiate from cancer, and in such cases the method described above should be followed. The fact that about 20 percent of the cases of prostatic obstruction in elderly men are due to malignant disease, shows the great importance of early diagnosis, which is now seldom made. The presence of vague pains in the pelvis or lower extremities should always lead to an examination of the prostate, and if this were always done, many early cases of carcinoma would be recognized. Sarcoma of the prostate is extremely rare and has been characterized by a very large soft, smooth tumor, which occupied a large part of the pelvis. This should be treated by massive doses of roentgen ray.

Prostatic hypertrophy is nearly always due to the result of chronic infections causing chronic inflammatory changes. In this class of cases apply diathermia to the prostate, either direct or indirect, dose from five hundred to nine hundred milliamperes, time from 10 to 30 minutes, gradually increasing the dose. The prostatic electrode is placed in the rectum against the prostate, the other over the pubis. This is followed by an ionizing dose of Roentgen ray, and massage by the Morse sine wave, or slow sinusoidal, to squeeze out the debris from the prostate and establish better circulation in this organ. The prostatic electrode is placed in the rectum against the prostate, the other over the lumbo-sacral region. Also use the ultra violet ray, both local and general, for its antiseptic and general systemic tonic effect. The rapidity with which the acute symptoms subside often surprises even an experienced user of physical remedies.

Ext. from The Ur. & Cu. Review.

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Cedar Rapids, Iowa

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Leather Binders for Fischer's Magazines

As a result of our announcement, in the May issue of this paper, we have had calls for something over a hundred binders for Fischer's Magazine, but will repeat our suggestion for those who missed the first notice.

Doctor, how would you like to have a nice leather or leatherette cover for your collection of "Fischer's Magazines" ?

Just supposing we could have a nice cover made up that would not cost over a dollar and a half; would you want one, or not?

Please drop us a line—NOW—Don't procrastinate! Whether you want one of these covers, or not, let us have your opinion, anyway. Thanks.

A Physiotherapy Treatment for Anemia and Amenorrhea in Young Women

By LEO C. DONNELLY, M. D.
Detroit, Michigan

This paper is based upon the assumption that anemia and amenorrhea are present in young women because growth and development has been too rapid and that the production of blood and tissue has been insufficient to meet the demands of puberty. Such young women may be well supplied with adipose tissue but the underlying tissues are often of poor tone so that they are unfit to compete favorably in school or business.

The treatment consists of; (1) general ultraviolet irradiations with the air cooled lamp and ultraviolet to any point of focal infection directly accessible to the water cooled lamp; (2) diathermia through the epiphyses of both femurs; (3) the use of a slow mechanical wave current over the nerve centers to stimulate the flow of blood and lymph through the uterus, ovaries, and fallopian tubes; (4) hygienic and (5) dietetic and other supportive measures.

The growing girl needs a large supply of calcium phosphorus and iron to produce new bone, connective tissue, blood, etc. It is empirically advisable to administer 0.1 grain thyroid extract plus 0.1 grain parathyroid extract daily, 0.5 gram of calcium carbonate daily, 20 drops of 100 per cent cod liver oil three times weekly and large quantities of milk and leafy vegetables. However, one is not sure that this is absorbed and stabilized by the system unless general ultraviolet irradiations of 2804 to 3022 Angstrom units are used. These stimulate the parathyroid glands which directly or indirectly act in conserving the availability of blood calcium in an ionizable as well as a combined condition thus influencing muscle nerve and other organ metabolism. Increase in blood calcium is demonstrable by blood chemistry examinations; it leads to an in-

creased deposit of calcium in the bone which is demonstrable by the x-ray. An increase in the inorganic phosphate in the blood is shown by laboratory methods. Increased calcium, phosphorus and iron can be demonstrated clinically.

Following a series of ultraviolet irradiations the blood calcium index is raised, which would lead one to deduce that general ultraviolet irradiations would benefit the following diseased conditions in which the blood calcium index is below normal; tuberculosis, precancerous conditions, varicose, gastric, duodenal or any slow healing ulcer, tetany, puerperal eclampsia, chronic rheumatism, hay fever, asthma, hyperesthetic rhinitis, mucous colitis and eczema. Thirteen of the above conditions have been treated by the author. Other clinicians report favorable results from ultraviolet treatment in these conditions.

The spectral band of 2967 Angstrom units is the specific line of greatest value in calcium metabolism, according to Pacini.

First degree ultraviolet erythema doses are given over the front, back and sides of the patient, and are repeated as soon as the resulting erythema begins to fade. A series of these treatments besides increasing the ionizable blood calcium, also increases the amount of hemoglobin and the number of red blood cells, and produces a physiologic skin which is efficient in protecting the patient against quick changes in temperature and exposure to dampness, making it practically impossible for skin infection to exist or occur. This physiologic skin is of great aid in eliminating toxic material from the blood.

Following the general irradiations the patient lies on her face under a therapeutic lamp which is placed at a height that sheds a comfortable warmth. Twenty-two B. & S. gauge sheet lead electrodes are applied over the lower outer portion of both thighs so as to cover the epiphyses of the femurs. A similar electrode connects the inner portion of the thighs. The d'Arsonval high frequency current is al-

lowed to pass through the epiphyses for thirty minutes or more. The intensity is gauged by the toleration of the patient, a comfortable heat is optimum. This diathermy current should not be compared to the current of a small so-called violet ray apparatus. The red and yellow marrow of the long bones produce the red blood cells. Diathermy produces a greatly increased flow of blood and lymph through the epiphysis of the long bone and their temperature is raised. This rise of temperature plus the increased blood supply increases the efficiency of the metabolism of the red and yellow marrow of the long bones and more red blood cells are thrown into the circulation. The results compare favorably with the transfusion of whole blood, thus obviating a surgical operation.

The body of the uterus is supplied by the tenth, eleventh, and twelfth dorsal segments, the cervix by the third and fourth lumbar and sometimes by the first and second sacral segments, the ovary by the tenth, and the fallopian tube by the eleventh, and twelfth dorsal and first lumbar segments (Behan). These nerves come off at the levels of the seventh dorsal to the twelfth dorsal spinous process (Cunningham). Two moist electrodes covered with chamois skin are so placed as to stimulate these nerves and a slow mechanical wave current is given for twenty minutes which causes the uterus and tubes to alternately contract and relax, this greatly increases the flow of blood through them. It has been shown many, many times that this method of treatment can develop an infantile uterus to a normal sized uterus. This is especially valuable in overcoming sterility.

The results obtained from this treatment are gratifying both to the patient and the physician and much superior to the results formerly obtained.

Report of a case of anemia, amenorrhea and dysmenorrhea apparently cured by the above methods.

A doctor's daughter, age twenty-two, since the beginning of menstruation at the age of fourteen years would go

without menstruating for periods of three to eleven months. When the periods came they were associated with severe pain, cramps, passing of clots and mental depression. Although she was of good weight, her flesh was soft, she was anemic, easily tired and did not feel as well as she thought she should feel. Two of the treatments outlined above brought about a normal painless menstruation one week following the second treatment, and a second normal period occurred on time the following month; So far she has had four normal menstrual periods, and indications are that they will continue normal. Her general health and mental outlook have shown a corresponding great improvement.

Summary: 1. Stimulation of calcium, phosphorus, iron and endocrine metabolism are induced by ultraviolet rays.

2. Stimulation of red and yellow bone marrow metabolism is effected by diathermy.

3. Stimulation of the uterus, ovaries and tubes is produced by the sinusoidal current.

Those interested in calcium metabolism in relation to glands of internal secretions and ultraviolet would do well to read articles by Halverson, Mohler, Bergeim, Kramer, Tisdall, Brasch, Bach, Hess, Casharis, Howland, Huld-schinsky, Pacini, Novak, Hollinder and many others.

While the author is not certain if any one else is using the same combination in treating this type of cases, he is certain that he did not originate any part of the treatment.

Am. Jour. Elect. and Radio.

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High Frequency Treatment of Internal Cicatricial Strictures

Klinische Wochenschrift, September 24, 1923, vol. 2, p. 1796

While surgical intervention in cicatricial strictures of the esophagus, the ileum, the rectum, or the urethra is often brilliantly successful, there are many instances in which it is

inapplicable or is ineffective because of cicatricial formation following the operation. In its stead the author has used the method of applying heat by means of high frequency in esophageal stricture with such satisfactory results that he regards it now as the method of choice in all cases because of its freedom from danger, its bloodlessness, and its ideal result.

The basis of the method is the fact that cicatricial tissue can be vitalized by diathermia. This almost bloodless, hard, unelastic substance can be brought by high frequency to such a condition as to have a free circulation, and consequently to be soft and elastic, a condition not obtainable by any other physical means of applying internal heat. The internal electrode consists of a flexible metal bougie and the indifferent electrode may be so placed externally as to direct the current to the thickest part of the stricture.

Sometimes the result is brilliant. In a child receiving nourishment through a Witzel fistula after twelve days the esophagus becomes so soft and flexible as to permit of swallowing all kinds of food. Results in the author's cases are permanent.

H. PICARD

Laughs of Other Days

(From Benjamin P. Shillaber's "Partingtonian Patchwork.")

"Diseases is very various," said Mrs. Partington, as she returned from a street-door conversation with Dr. Bolus.

"The doctor tells me that poor old Mrs. Haze has got two buckles on her lungs! It is dreadful to think of, I declare. The diseases is so various! One way we hear of people's dying of hermitage of the lungs; another way, of the brown creatures; here they tell us of the elementary canal being out of order, and there about tonsors of the throat; here we hear of neurology in the head, there of an embargo; one side of us we hear of men being killed by getting a pound of tough beef in the sarcofagus, and there another kills himself by discovering his jocular vein. Things change so that I declare I don't know how to subscribe for any diseases nowadays. New names and new nostrils takes the place of the old, and I might as well throw my old herb-bag away."

Fifteen minutes afterward Isaac had that herb-bag for a target, and broke three panes of glass in the cellar window trying to hit it before the old lady knew what he was about. She hadn't meant exactly what she said.

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Monday, August 11, 1924

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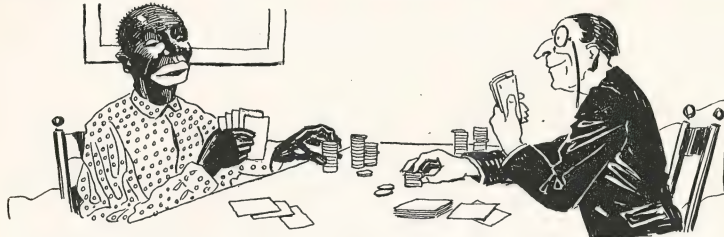
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A PAGE OF FUN



Englishman (in poker game)—“Well, I’ll wager a bally pound on this.”
 American Ducky (holding four aces)—“Ah dunno too much ’bout yo’ ol’ English money, but I’ll bump yo’ a couple of tons.”

□ □ □

First She: “Your husband has a clever-looking head. I suppose he knows practically everything.”

Second She: “Sh-h—he doesn’t even suspect anything!”

□ □ □

(From a story)—“She held out her hand and the young man took it and departed.”

□ □ □

“Congressman, I want you to find a Government post for my boy.”

“Is he intelligent?”

“If he were I shouldn’t be worrying you for a Government job. I could use him in my own business.”

□ □ □

“Why did you fire young Jones?”

“Spent too much time reading success stories.”

□ □ □

Big Bill Says:—

I recently read a book on Insanity but stopped in the middle of it because it became entirely too personal.

“Look, papa, Abie’s cold is cured and we still got left a box of cough-drops.”

“Oo, vot extravagance. Tell Herman to go out and get his feet wet.”

□ □ □

She: “I wonder if you remember me? Years ago you asked me to marry you.”

The Absent-Minded Professor: “Ah, yes, and did you?”

□ □ □

Englishman (watching an inter-collegiate dance): “I say, they get married afterwards, don’t they?”

□ □ □

Salesman: “How many cigars do you smoke a day?”

Purchasing Agent: “Oh, any given number.”

A man should never be ashamed to say he has been in the wrong, which is but saying in other words that he is wiser today than he was yesterday.

—Pope

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FISCHER'S MAGAZINE



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359

AUGUST, 1924

THE question for each man to settle is not what he would do if he had means, time, influence and educational advantages, but what he will do with the things he has.

—Hamilton Wright Mabie

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. II

AUGUST, 1924

No. 9

Modern Alchemy

The alchemists of olden times carried on weird and mysterious experiments in the vain effort to transmute the baser metals into virgin gold. Such experiments came to naught and their dreams have never been realized. But how much more wonderful are our transmutations of today in the fields of human thought and scientific achievements.

Into the minds of men are forever and ever entering impressions and sensations which are changed in form and substance and transmuted into wonderful expressions. Into the mind of a Marconi enters the germ of an idea—with the wireless and the marvelous manifestations of the radio as a result. Can anyone visualize or grasp the sum total of human progress as represented by the names of Pasteur, Roentgen, Morse, Bell, Edison, Watt and the Wright Brothers?

A composer of music influenced by the grandeur of an ocean sunset, a lovely pastoral, or a momentary glimpse into the depths of a human heart, transmutes his impressions into music. The artist or the poet, hearing the music, transmutes its motif into a painting or a poem that contains heart throbs for millions of his fellows.

The alchemists of old, with all their lore, failed because their efforts were made with the baser metals. They failed to realize that in life the finest material with which to work is man—his progress and his welfare. One good deed, a word or a smile, which tends to make man stronger, more responsive to human tenderness and human sympathy, is worth more than the centuries wasted in the effort to change dross into gold.

The Treatment of Pulmonary Tuberculosis by the Ultra-Violet Ray

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

(Continued from the July issue)

I will report two cases of advanced pulmonary tuberculosis that were treated by the ultra-violet ray, both of which undoubtedly owe their lives to the use of this modality.

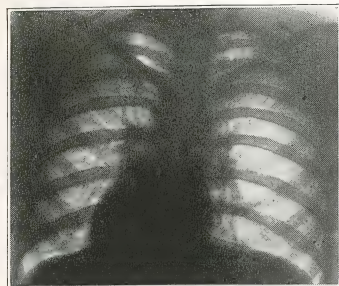
E. G. Female, blonde, age 24 years. Development of fifteen-year-old girl. Very weak and anemic. Had undergone three unsuccessful operations for tuberculosis fistulae during the past fifteen months. Examination revealed marked involvement of both apices. The old tuberculosis abscess on her right hip was discharging pus through two fistulous openings and was causing her a great deal of pain. The B. C. was 15,000; R. B. C. 4,000,000 and Hb 40 per cent. Her temperature ranged from 99 to 102 degrees Fahrenheit.

She was taken to the hospital, the tuberculosis fistulae were incised, curetted, swabbed with pure carbolic acid and packed loosely with gauze. At end of six weeks, patient left the hospital with the abscess and tuberculosis fistulae apparently well, and was placed on the usual cod-liver oil, rest, and open air treatment prescribed for sufferers from tuberculosis. At the end of about three months she was back with another fistula that opened into the old scar. This was merely incised and swabbed with iodine. It soon healed. Seven months later I was notified that she was not expected to live. She had been bedfast for six weeks and the old trouble was no better. I had her treated symptomatically until she could be moved here. Examination showed advanced tuberculosis in both lungs. She was very emaciated, and was expectorating profusely with an occasional small hemorrhage. The old fistula had opened and was draining again. She looked like a hopeless case.

Ultra-violet treatments were begun, using the aircooled lamp at a thirty-inch distance. The treatments were given daily, beginning with one minute the first day and increasing the exposure a minute each day until she was receiving ten minutes, front and back, at each treatment. We then maintained the time of exposure constant and shortened the distance one or two inches each day until the burner stood about fifteen inches above the body. Like most of these "T. B." sufferers, she showed extreme tolerance for the ray, and although she quickly became bronzed, she never became sunburned to the point of discomfort. (I explain this extreme tolerance of these patients to the ray as being due to the roughened, dry condition of their skin. The patients that have soft, vascular skins are the ones that burn quickly.) The ultra-violet treatments were preceded in each instance by radiating the body with the deep therapy lamp for twenty minutes over the chest and back. The distance of the lamp from the body was regulated according to the comfort of the patient, but the heat was made intensive enough to produce a flushing of the skin and a profuse perspiration. After four weeks of treatment, the patient ceased to have afternoon temperature, had gained in weight, and the appetite had improved. She continued the treatments for another thirty days, and then was sent home with instructions to return in four weeks for further treatment. On her return she was treated daily for a period of three weeks and then was dismissed clinically well. After six months she writes that she is in perfect health, has gained seventeen pounds since leaving the clinic here and is very grateful for all that we did for her. One point worth mentioning, is the fact that the tuberculous fistula healed rapidly during the ultra-violet treatments and has given her no more trouble.

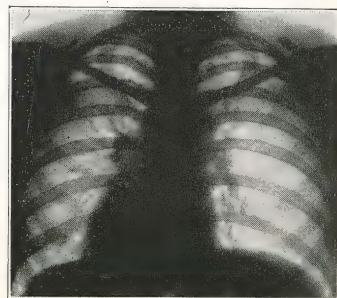
The other case that I wish to report is almost a parallel to the one just described. With this patient, however, the trouble was entirely pulmonary. When first presented for treatment, he was so sick that he had to be placed in the hospital for several weeks and treated symptomatically

before he could be brought to the clinic for ultra-violet treatments. Briefly, his case presented the following points of interest:



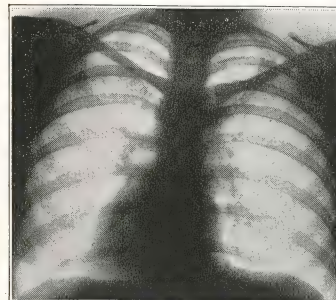
Before Treatment

W. D., boy, aged 15 years. Tall, anemic, hollow-chested. When presented for treatment, he was running a temperature of 104 degrees Fahrenheit, was coughing constantly and expectorating huge quantities of thick, creamy pus. He was too weak to stand and had to be placed in the hospital for several weeks before he could be brought to the clinic here for treatment. X-Ray examination showed almost complete involvement of the right lung with cavitation. There was also some involvement of the left upper. The patient was so toxic that we had difficulty in inducing him to take a little whiskey and other stimulants in sufficient quantity to maintain life. Operation for drainage of the rotten lung was suggested and abandoned as a hopeless procedure. His life was despaired of. At the end of two weeks, however, he began to take more nourishment, and we soon began bringing him to the clinic on warm days for ultra-violet treatments. Within less than a month he was able to make the trip himself on the street-car. His temperature was now normal most of the time, and the expectoration was not nearly so profuse. He continued the treatments for six weeks longer, during which time he gained rapidly in weight and strength. His father then took him to Arizona in the hope that the dry climate would prove more healthful than the changeable climate of



During Treatment

the Mississippi Valley. After four months he writes that the boy has continued to gain and is getting along nicely. Since going to Arizona, I have continued to instruct them relative to sunshine, diet, rest, and general hygienic measures.



Case after 10 weeks

Sputum examinations of each of the above patients showed tubercle bacilli in abundance at the time of their entrance to the clinic. These decreased rapidly under the ultra-violet treatment.

I mention these cases simply because they illustrate what can be accomplished by the careful and persistent use of the ultra-violet ray. Both cases were considered hopeless by their attending physicians, and with the usual symptomatic treatment, would doubtless have died.

SUMMARY

1. The actinic or ultra-violet ray is not a specific for pulmonary tuberculosis, but is perhaps the most valuable contribution to the treatment of this dread disease that has been produced in recent years.
2. To treat this condition successfully, the physician must study each case separately, prescribe proper drugs, regulate the diet, assign certain hours for rest, instruct regarding exercise and general hygiene, and leave nothing undone that will help to restore the patient to health.
3. The treatments should not be given by an inexperienced technician, but by one that is trained in the use of the apparatus, in hygiene, and in the care of the sick.
4. When carefully and scientifically treated, as outlined above, we may confidently expect a clinical cure even in advanced cases of pulmonary tuberculosis.

Measured Wave Currents

By FREDERICK H. MORSE, M. D.

With an artist or a sculptor, work is successful according to the accuracy with which he reproduces or imitates Nature. Physiologists understand and biologists have accurately demonstrated that Nature provides in the vegetable and animal kingdom nourishment to maintain normal nutrition of the human body.

Enterprising pharmaceutical manipulators, as well as scientific pharmacists, attempt to arrange the seven essential elements that make up the structure of the body so that when one or more elements are deficient they can be supplied. There always has been and always will be discoveries of drugs and combinations of drugs to attempt to supply what may be needed to maintain normal nutrition or restore metabolism either general or local.

The more accurately the indications for determining what the insufficient element may be, the more definite and scientific is the medication that follows. And again, the more accurate the fruit or vegetable containing the necessary ingredient can be adapted to the requirements of the individual, the quicker will be the absorption of that essential element when taken from a vegetable instead of a medicinal source. In other words, from an organic origin versus an inorganic.

If the absorption of essential food ingredients is taken according to Nature's original plan sufficient to maintain and not over-strain the organism, and according to best physiological teachings, regular periods of ingestion, digestion, and absorption and a corresponding period of rest that Nature may recover itself from the possible exertion of the above metabolic process, other things being equal, man should live a hundred years.

Modern life, with its many deviations of maintaining existence all the way from unbalanced diet to ill-fitting gar-

ments and footwear, have so distorted the original plan that the old phrase of "three score and ten" too often closes the life performance with a practical cessation of mental and physical activity or actual demise with the majority.

The above summary of undisputable facts does not in any way help the sick, only as a warning that humans, like vegetation, are subject to decay and also that this degenerative process, barring accidents and acute diseases, comes sooner or later in some part of the body where something has happened to give it a start.

The disappointing effect of stimulants, the unreliability of medicine only as a palliative measure, behooves us to think seriously upon all means and methods to prolong existence by preventable measures. Life depends upon normal cell activity, and that cell activity varies greatly in different tissues and organs and should be recognized as the sine qua non in restoring functional activity; that point may be carried further by saying the underlying law of life itself originates and is perpetuated only through rhythmic impulses or vibrations.

The propriety of utilizing in medicine for restoring function by the use of many processes brought before the profession during the last twenty years should, if intelligently appreciated, be a means of prolonging existence and bringing more comfort to suffering individuals than the whole product of the century of discoveries previous.

Thermo-therapy and photo-therapy are dependent upon rays of varying magnitude. The X-ray for therapeutic applications because of its special virtues has deeper penetrating power. High frequency has in its vacuum and non-vacuum electrode applicators a localized form of heat, limited in its usefulness. Diathermy in its usual mode of application may be made to produce an immense amount of heat localized in diseased areas as desired. Static electricity with its most common and valuable form of application to and over diseased areas, under the usual name wave current, has a special virtue of its own because of its ability to liberate

near and distant toxæmia and other form of deleterious material. And last, but from a therapeutic point of view in the writer's opinion, the most important, the direct or commonly called galvanic current.

Wave current as may be applied from the different modalities mentioned may consist of any form of mechanism that will permit heat, light, electricity, or motion to manifest its beneficial action when applied to the body in a way that will synchronize as near as possible the well-known physiological action of that part.

If a galvanic current is applied through a portion of the body with moist surface electrodes, up to the point of easy toleration, in a short space of time the electrons and molecules will so arrange and re-arrange their positions that a current flow is actually established from the positive to the negative pole. If this current, for instance twenty-five milliamperes, is applied suddenly the skin resistance will be so great as to not only cause shock and pain but the contraction at first will actually retard the process of transmission as compared with the same amount of current having been allowed to be turned on gradually.

If the current is suddenly reversed unpleasant shock will follow, muscular spasm will ensue especially about the positive pole, and the process is much interfered with. This is specially demonstrated in the use of the so-called "sinusoidal" current, which is constantly reversing itself, and whether it is fast or slow, weak or strong, the same characteristic property is always present; and the one object to be looked for is frustrated by this current reversal.

The application of a powerful light, the thermo-penetration variety, brought suddenly to the body will have an unsalutary effect compared with its gradual approach. The same applies to high frequency applications, diathermy, static wave current, and even mechanical vibration.

(Cont'd on page 10)

Special Program for Our Monthly Physiotherapeutic Meeting

Monday, September 8, 1924

WM. E. HOWELL, M. D., associate of Dr. Plank, at the American Hospital, Chicago, will explain the "Ease and Effectiveness of Electro-coagulation Operations," 9:30 to 10:15 A.M.

C. H. FREDERICKSON, M. D., of the Veteran's Bureau will talk on the "Advisability of Physiotherapy in General Practice," 10:15 to 11:00 A.M.

R. F. ELMER, M. D., will conduct a very interesting clinic on the "Electro-coagulation of Tonsils." We will endeavor to have a number of cases on hand, that the actual work, as well as some results obtained, may be seen. 11:00 to 12 noon.

The entire afternoon will be devoted to practical demonstrations on various pieces of Electrical apparatus.

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.

We have ample space for all of you. Remember the date and come to our Lecture and Demonstrating Rooms at

2335 WABANSIA AVENUE
CHICAGO

We have heard from some physicians that Monday is a rather hard day to get away from the office, and that probably Wednesday or Thursday will be found more suitable. This is a vital matter, and we wish to obtain the opinions of a number that the best day of the month be selected. What is your opinion, doctor???

H. G. FISCHER & CO., Inc., Phone Armitage 0323

The writer has seen in various mechanism the above modalities adapted to surging devices but only in rare instances has the principle been adopted, only as applies to synchronizing the alternating and uni-directional surging methods as applies to the selective motion surging wave generator.

A well-known manufacturer of light treatment devices, along the line of my thoughts and suggestions, is already arranging mechanism for the rhythmic measured application instead of the persistent steady glow as is usually understood.

Let us hope that this surging principle as applied to all Nature's functions, having a period of rest and a period of activity, on defective functional areas with forced activity will be more generally adopted.

462 Boylston Street,
Boston, Massachusetts.

Read before the Central Society of Physical Therapists, June 17, 1924.

□ □ □

X-Ray Treatment of Lesions of the Thyroid Gland.

John G. Williams, M. D., Long Island M. J.

Goiters are classified as (1) simple, cystic, colloidal; (2) adenoma; (3) exophthalmic; (4) malignant. Adenomata with hyperthyroid symptoms, exophthalmics and malignant goiters are suitable for x-ray therapy. Rest and freedom from worry and excitement, together with medical treatment are essential concomitants of x-ray therapy. Cases not completely cured are better surgical risks after this form of treatment. Surgery is indicated in malignant disease of the thyroid whenever complete removal of the growth is possible and if inoperable the case should be treated by x-ray as this will probably relieve the symptoms and may possibly cure the disease. If symptoms persist other surgery than x-ray therapy should be used.

Ultra-Violet Ray Therapy in Dermatology

JACK W. JONES

Southern, M. J., 16: 423

In dermatology the therapeutic value of the ultraviolet rays depends upon the bacteriologic and stimulative action. The action of the rays upon the skin is manifested symptomatically by an erythema of the part exposed. Thus, a stimulative erythema, a regenerative erythema or a destructive erythema can be obtained, depending upon the length of exposure. Scalp conditions, particularly seborrheic dermatitis or alopecia premature from seborrhea, alopecia areata and psoriasis, seems to react very favorably to ultraviolet rays. In lupus erythematosus, particularly of the chronic discoid type, the ultraviolet rays give promising results, but here again, as in alopecia areata, the primary focus (whether tuberculous or otherwise) must receive attention. In the treatment of adenom sebaceum the rays are about the only agent upon which much dependence can be placed, and the same might be said in regard to the chronic sluggish ulceration caused by trauma or infection, in which epithelium seemingly refuses to grow. The literature contains reports of successful results following ultraviolet-ray treatment of nevus flammens and parapsoriasis.

□ □ □

Suction Tonsillectomy

For those of our readers who have apparatus with Suction attachment we refer to a very interesting article on suction as aid to tonsillectomy by J. E. Braunstein, M. D. in the Eye, Ear, Nose and Throat Monthly for March, 1924. The various instruments illustrated are best used in connection with Fischer Cabinets equipped with the Motor with Vacuum and Pressure Pump. We will be glad to tell those who may be interested more about this technic.

Quartz Light Therapy

By LEO C. DONNELLY, M. D.

607 Kresge Building, Detroit, Michigan

Generally speaking, an infected, ingrown nail should be completely cured in four or five days when promptly treated by surgical measures and the proper use of ultra violet rays, both before and after such procedure.

Actual treatment begins by the removal of scabs and pus, followed by a first-degree reaction procured by a treatment of short duration with the Quartz lamp. This sterilizes surrounding tissue, causing at the same time a flushing of superficial blood-vessels, thereby warding off the spread of infection.

We then use a third-degree reaction on the area of infection where the nail is to be removed, with consequent sterilization of the field of operation and a material lessening of pain sensibility as well. After removal of the usual V-shaped portion of nail and infected tissue, a further second-degree Ultra Violet Ray reaction is given to the resulting wound, inducing haemolysis, insuring prompt healing without infection, and thereby giving much quicker and more satisfactory results than otherwise could be anticipated.

* * * *

Where infection is evidenced between the toes, often at the base of soft corns, there, again, Quartz lamp treatment is indicated in order to secure the most favorable results. The attendant abscess is generally deeply seated—dorsum of foot swollen and sensitive.

The entire foot and lower leg is given a first-degree Ultra Violet Ray reaction with the Alpine Sun Lamp before making an incision into the abscess. After the incision is made and proper drainage secured, the Kromayer lamp is used, passing a suitable Quartz applicator into the incised opening, with the purpose of sterilizing all portions of the abscess base. Following this procedure, markedly reparative changes are manifest.

The Exhibit of H. G. Fischer & Co., Inc.



The Exhibit of Physiotherapeutic Apparatus at the American Medical Association Convention, on the Municipal Pier, Chicago, June 9th to 14th, 1924.

□ □ □

Electric Coagulation or Endothermy. We have for years used fulguration in attacking papillomata through our open air cystoscope with the patient in the knee-chest posture, but have always found that the chief difficulty was that we were able to make so little impression on a massive tumor at one sitting, even though we attacked the pedicle. Fulguration seems to yield its best results in sparking out superficial flat areas of disease where the papillary tumor is disseminated. In papillary carcinomata with infiltration, it is of course worse than useless. It is not our desire, however, to deprecate an agent which in a limited field has proven such an advance over previous ineffective methods.

The Fischer "Diathermo Indicator"

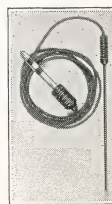
It is with extreme pleasure that we announce the perfection of a method whereby physicians may know exactly at what degree of temperature they are treating, when employing Diathermy.



Suggestions and requests have come in steadily, in reference to some device that would indicate with extreme exactness just what heat was being produced within the tissues, and so much importance was placed back of this apparent necessity, that we set our engineers to the task without delay.

The obstacles to be overcome were numerous; we were not to employ neither mercury nor glass; the instrument must be small enough that it could be passed through a cystoscope; it must be very sensitive, and record small temperature changes immediately; and above all it was absolutely necessary that the instrument be used in rooms of varying temperatures and still retain a reading that could be pronounced standard. And, furthermore the readings must not be affected in any way by any voltage or volume of High Frequency Current which may be applied to the patient.

We have produced a little instrument which is simplicity in the extreme, conforms to all the requirements, and combines exactness beyond our fondest expectations. The sensitive unit is enclosed in a silver tube of $\frac{1}{8}$ inch diameter, and but the slightest change in warmth immediately causes a deflection of the galvanometer needle. By an ingenious method of combining a compensating lead wire, and by the adoption of the well known Wheatstone Zero Method, the dial of the instrument can be set at the desired temperature, and the physician, by



increasing or decreasing his Diathermy Current merely causes the needle to reach the Zero point—indicating that he has reached exactly the degree of heat desired.

Physicians are fast learning that they can reproduce results provided they can duplicate the amount of given heat for a certain length of time, and with this new instrument an assured fact we look forward to tremendous strides in Diathermy accomplishments in the near future. The little instrument, which we are calling the Fischer "Diathermo Indicator," and its use will prove an innovation in the art of applying Diathermy, and the problem is now passed directly back to the physician—it will be up to him to register his readings, and to prove beyond a shadow of doubt that duplication of results is easily possible.

Some of these instruments are already out in the field, and shortly many more will be placed in the hands of well known authorities throughout the country, and Fischer's Magazine will keep you in touch with progress made.

The Fischer "Diathermo Indicator," complete with two units will list at \$100.00. Deliveries in about 30 days.

Physiotherapeutic Lecture Course

By MEL R. WAGGONER, M. D.

Cedar Rapids, Iowa

To be given at

DETROIT, MICHIGAN, HOTEL WOLVERINE

August 25th to 30th

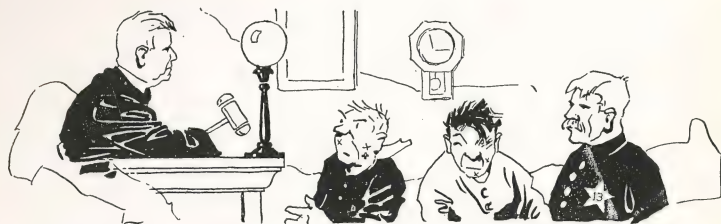
PERSONALLY CONDUCTED COURSES—CLINICS—LECTURES

For Details, Fee, etc., write

MEL R. WAGGONER, M.D., Cedar Rapids, Iowa

Courses will also be given subsequently at Milwaukee, Wis., Chicago, Ill., and New York, N. Y.

A PAGE OF FUN



Magistrate: "Can't this case be settled out of court?"

Mulligan: "Sure, sure; that's what we were trying to do, your honor, when the police interfered with us."

□ □ □

"Did Charles kiss you last night, Penelope?" asked a Boston mother.

"There was a slight labial juxtaposition as Charles departed, mother dear; but I assure you it was only momentary and therefore innocuous."

□ □ □

They were motoring. The talk ran to a discussion on vaccination. He thought vaccination on the arm the proper thing; on the other hand, she stated most emphatically that she didn't let the doctor vaccinate her where the scar would always show. To prove his contention, he rolled up his sleeve and showed that the scar had almost become invisible.

She then inquired: "Would you like to see where I was vaccinated?" He eagerly replied: "Yes, indeed."

"Well," said she, "keep your eyes open; we'll drive by there pretty soon."

□ □ □

She: "You know, dear, our guild has been trying to think of a way to help that poor Mrs. Smith, who is too proud to accept money?"

He: "Yes, darling."

She: "Well, today I thought of a lovely plan, and I mailed a check right out to her."

He: "How did you manage it?"

She: "Why, I simply wrote the poor woman a check and signed it 'Anonymous.'"

□ □ □

Doctor: "And how is Mr. Sikes this morning? Has he had any lucid intervals?"

Mrs. Sikes: "No, doctor, he hasn't had a thing but what you ordered."

□ □ □

Student: "And poor Harry was killed by a revolving crane."

Englishwoman: "My word! What fierce birds you have in America."

IT is the quiet worker that succeeds. No one can do his best, or even do well, in the midst of badinage or worry or nagging. Therefore, if you work, work as cheerily as you can. If you do not work, do not put even a straw in the way of others. There are rocks and pebbles and holes and plenty of obstructions. It is the pleasant word, the hearty word, that helps.

See Pages
8 and 9

*for further announcement
of the*

Annual Fall
Physiotherapeutic
Convention

at
Chicago

FISCHER'S MAGAZINE



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360

SEPTEMBER, 1924

BE PLEASANT.

**YOU HAVE NOT FULFILLED
EVERY DUTY UNLESS YOU
HAVE FULFILLED THAT OF
BEING PLEASANT.**

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. II

SEPTEMBER, 1924

No. 10

OUR MONTHLY "MONDAY" PHYSIOTHERAPY MEETING has been CANCELLED for the month of OCTOBER because of the close proximity of our **ANNUAL FALL CONVENTION**—the dates of which have been definitely set for the week of October 20th to 24th, 1924, and the place, the Logan Square Masonic Temple, at Logan Square, Chicago. **See page 8 and 9 this issue for further details.**

Just a brief comment on our meeting of Monday, August 11th—we had only one clinician, Mel R. Waggoner, M. D., of Cedar Rapids, Iowa—and over a hundred and fifty physicians to entertain—but our speaker of the day proved himself more than equal to the task!

YOU probably attended; but for those who did not have the opportunity, we must say that splendid enthusiasm was constantly in evidence. There were 32 patients to handle—Dr. Waggoner treated every one, and on direct questioning most of the patients were quite agreed that the methods employed were both painless and effective. Dr. Waggoner will be invited to address our audience again in the near future; watch for announcements in this publication.

(All of the correspondence relative to Physiotherapeutic subjects is not of the most agreeable nature, as is evidenced by the two following letters. The first is copy of letter received by one of our distributors, and the second is their response thereto. The writer of the first letter is very skeptical, but he is just the type who, when he has a more thorough understanding of electricity in medicine becomes a very ardent booster.)

THE EDITOR

July 18, 1924

Gentlemen:

Answering your letter of the 10th inst., allow me to remark that the medical literature giving reports of successful treatments with Diathermy are doubtless numerous and interesting, but do you ever get the other kind? While writing these letters do you ever pause to think of the wonders of Diathermy? E. G. "In cancerous conditions and vascular tumors it seals the blood and lymph channels" and yet it dilates those same vessels in Arteriosclerosis? What a wonderful machine, or in other words "Ain't Nature Wonderful?"

Yes, I had a patient on whom the great Dr. ——— operated for many long weeks in the ——— Hospital. The patient had Gangrene from Arteriosclerosis and was doubly assured by the celebrated Dr. ——— that the leg would be saved. Well it was saved until my patient nearly died from exhaustion, but common sense finally prevailed and the leg was amputated.

No this isn't all. The other leg was treated as a prophylaxis against a similar fate and on his return to ——— he was treated several weeks more with Diathermy. This was about a year ago and at present the patient is suffering from all the symptoms of on-coming "Gangrene" and looks forward to another amputated leg before many months.

Yes, I agree with you. It has (in the hands of unscrupulous men) vast financial possibilities. I have seen this fact demonstrated to my entire satisfaction.

Well I guess this will be all for today. This letter is really a "Testimonial," but of course you needn't feel compelled to publish it unless you really feel that you must. Electricity is possibly of some use in selected cases, but if there is anything under Heaven "faked" as much, then I haven't heard of it.

Very truly yours,

———, M.D.

Dr. ———,

July 26th, 1924.

Dear Doctor ———:

Replying to your somewhat effusive commentary on Diathermy, which no doubt was prompted by the fact that one of our circular letters came to your office, permit me to say that I agree with you, "Nature is wonderful;" but strange and baffling as she may seem, she is no less interesting than some of her products, E. G. some physicians I have known. While for many years our sole business has been dealing with doctors, yet every now and then we see new and strange things happening. For instance a physician who is presumed to be an educated man, expressing opinions concerning things with which he has had no experience or knows nothing about, as freely as the uneducated bigot who sits whittling on a soap box in a cross road country store down in the Ozarks, with an opinion for every question that reaches his ears, no matter what the nature of the question may be—political, sociological, scientific or what not, again we remark, "Ain't Nature wonderful."

Our old friend "Bill" Shakespeare said many years ago that "a little learning is a dangerous thing," and this we see exemplified over and over again. And it would seem that some of our doctors at times, feeling the urge of expounding some mighty truths concerning Diathermy, testify to the correctness of "Old Bill's" statement. For it is a fact, Doctor, if the statements contained in your letter are to be taken as an index of your knowledge of Diathermy you would pass with a grade of zero plus, because you know how to spell the word and that is all.

No one recognizes the paucity of knowledge among the rank and file of the medical profession with reference to some of these new modalities better than we, yet some of the biggest men in the profession have taken up this line of work and are beginning to write books and reporting results through the medium of the leading medical journals. So, Doctor, if you feel constrained to comment further on some of these newer phases of medicine, permit me to suggest the perusal of some of the newer medical books, or any of the leading medical journals.

For your information, I may say that a school will be conducted in ———, one day each month, starting in September, for the benefit of physicians interested in this kind of work. If you are really interested we shall be glad to advise you further in this regard.

Further, let me say we always welcome criticism, knowing that it will not all be favorable or constructive, yet if it comes from someone with experience, or one who knows, it is gratefully received.

If we can be of help in furthering your knowledge along these lines, we stand ready to serve you.

Sincerely,

———

Electro-Coagulation of Hemorrhoids

J. B. H. Waring, in the Virginia Medical Monthly, presents the following treatment of hemorrhoids:

Operation is performed under local anesthesia. About three-quarters of an hour prior to operation, morphin sulphate, grains 1/4 to 1/3, is given by mouth, together with atropine sulphate, grains 1/100, and strychnin sulphate, grains 1/30. This may be given by hypo if desired.

Bowels should have been emptied prior to operation, preferably by a simple enema or glycerin suppository. Operative field is now cleansed with mild soap and water, followed by irrigation with a weak potassium permanganate solution, say 1 to 3,000 or 1 to 5,000; this largely eliminates fecal odor for the time being, and renders field more satisfactory to work in from an olfactory standpoint anyway.

An appropriate spot of rectal mucosa is swabbed with 10 per cent cocain and through this preliminarily anesthetized area, the entire operative field is successively anesthetized in a practically painless method by successive injections of 1 or 2 per cent novocain solution. If a glass suction cup of sufficient size to cover the anus is now applied, internal piles will be drawn down and temporarily converted into interno-external piles; likewise, all pile masses will be congested up and made prominent to inspection, so that the operator is not so likely to miss a budding pile or two, and have his patient return in six months after operation with the lament that his piles are coming back on him, etc. Individual pile masses may now be taken up one by one and held in the grasp of an appropriate sized suction tube of glass; or they may be drawn out with seizing forceps, and then held across their base with a regular pile clamp, merely for convenience of attack. The suction tube holds the hemorrhoid out prominently, and serves the purpose of a steadying forceps, without the crushing and lacerating effect of a pile clamp.

An electro-coagulation needle in an insulated handle is now brought into play, using the bipolar d'Arsonval high-frequency electric current directly on the pile mass. The indifferent electrode, usually about a 5 or 6 inch plate of diathermy metal, is strapped over one leg or over the shoulder or abdomen, care being taken to have good contact by means of a cloth wrung out of saline, damp felt or special electrode metal with soapsuds for better contact or patient may grasp the regular auto-condensation handle instead.

The electro-coagulation needle in an insulated handle is now connected by flexible insulated wiring to active pole, and the needle carried through base of hemorrhoid under edges of suction tube holding pile out prominently. With foot-switch usage, just enough current is sent through the needle to coagulate, but not to carbonize or burn hemorrhoidal tissues; this process is repeated with several injections of the needle until a layer of tissue at base of pile proper is entirely coagulated, thus destroying blood and lymphatic supply to the pile proper. A little experience will quickly determine for the operator just about the right amount of current to employ.

If there are, as is usually the case several pile masses to be removed, each successive pile is taken up and treated in the same manner; only a few minutes is required for the entire procedure. If care is taken to handle the pile masses gently and proper anesthesia obtained, the entire operation is painless. The tissues at base of each pile are simply coagulated in a manner similar to the poaching of an egg. Pain following the operation would be indicative of some sparking and some degree of carbonization on the active electrode, which is to be avoided.

This completes the operation proper; we have strangulated each pile mass far more effectively than if we had the stoutest ligature encircling its base, and this has been accomplished without any pain, bleeding or use of the knife; no raw surfaces have been left to cause the pain, which follows

the usual surgical treatment of piles. Coagulation of its base destroys blood and lymphatic supply of the pile mass, and in a few days this sloughs away in a painless and bloodless manner, skin and rectal mucosa involved healing over the operated area very rapidly. Our patient has not been subjected to hospitalization, with its attendant fright to the average patient; he is not upset and miserable in mind and body after reaction from a general anesthetic; further, he is not troubled to any extent with irritation around the anus. The treatment is admirably an office procedure, and at its conclusion our patient is ambulant, and able to go home under his own steam as it were. Nervous or weakly patients are instructed to take it easy for a day or two; one old lady of 80 summers, I kept in bed for three days; but most of them are up and about in short order.

We do not have to make any radical change in the patient's dietary, but instruct him to eat a trifle less for a few days until full activity is restored. Liquid petrolatum, or preferably petrolagar, in full dosage for a few days, is very helpful in rendering the bowel passages bland and easy; our patients do not dread the first bowel passage after operation; this gives them practically no discomfort, and we have the bowels move the next morning as usual. This is radically different from major surgical attack on hemorrhoids, where often the bowels are purposely restrained for "healing" purposes; and after a number of days the first bowel action is usually looked upon as a formidable adventure, fortified by large dosage of oleum ricini.

□ □ □

To the Readers of FISCHER'S MAGAZINE:

Those of us who are convinced that physiotherapy is of real value in the practice of medicine, deplore the fact that there are so many prominent men in our profession who are skeptical or cynical, or even sarcastic about physiotherapy.

Some of the big men to whom we look up as authorities are still prone to consider the work somewhat in the light of quackery. Men who are well established in medicine look askance our apparatus and our claims for what it will do. We know that it is because they have not yet been sufficiently informed; we are sure that if they once gave it a fair trial, they would be with us. But, they won't listen when we talk to them.

These very same fellows, when insulin came out, accepted it instantly and implicitly. Why the difference? The whole thing hangs on the source from which they got their information. The announcements of insulin first appeared in the classical media of medical literature. It was a scientific news item first of all.

But, just because a large amount of the information on physiotherapy is being disseminated by the manufacturers in their own private literature, many of our conservative colleagues assume *ipso facto* (as I did before I became convinced by several years of personal study) that the whole business is a commercial scheme, and therefore valueless.

The facts in the matter are, that a large amount of careful scientific work has been done on physiotherapeutic subjects. But, the general run of medical men does not know of it, because the reports of it have not appeared in the current medical literature. There is a certain set of medical periodicals which are accepted as gospel by the great mass of medical men.

Physiotherapy is the most fertile field today, for original clinical observation. The editors of this same class of classical medical journals will be only too glad to get such material from any of us, if the observations are accurate, and the papers are scientifically worked up. The work would not even have to be new; a series of cases confirming or disproving the effect of autocondensation on blood pressure or of quartz light on carbuncles—accurate, logical, conserva-

(Cont'd on page 10)

SPECIAL ANNOUNCEMENT!

Annual Physiotherapeutic Meeting

At Chicago, Illinois

October 20th to 24th, 1924

The Convention of Physiotherapeutists at the Logan Square Masonic Temple, Chicago, last fall was heralded as such a decided success that it has been decided to make this an annual affair.

These meetings, where all manner of subjects pertaining to Physiotherapy may be discussed openly and informally, are the direct result of numerous requests, due to the difficulty experienced by physicians in obtaining practical information from reliable sources in the efficient application of these measures.

The following physicians of note will participate:

E. C. Henry, M. D., Omaha, Nebraska, *Chairman*
 Miles J. Breuer, M. D., Lincoln, Nebraska
 W. B. Chapman, M. D., Carthage, Missouri
 Wm. L. Clark, M. D., Philadelphia, Pa.
 Maurice H. Cottle, M. D., Chicago, Ill.
 Leo C. Donnelly, M. D., Detroit, Michigan
 Emile C. Du Val, M. D., Chicago, Illinois
 R. F. Elmer, M. D., Chicago, Illinois
 Chas. H. Fredrickson, M. D., Chicago, Illinois
 Dean W. Harman, M. D., Ames, Iowa
 Abraham R. Hollender, M. D., Chicago, Illinois
 Wm. E. Howell, M. D., Chicago, Illinois
 D. Frank Knotts, M. D., Chicago, Illinois
 Disraeli W. Kobak, M. D., Chicago, Illinois
 Gustav Kolischer, M. D., Chicago, Illinois
 Arthur La_Roe, M. D., Newark, New Jersey

Ellis G. Linn, M. D., Des Moines, Iowa
 Frederick H. Morse, M. D., Boston, Mass.
 Roswell T. Pettit, M. D., Ottawa, Illinois
 Curran Pope, M. D., Louisville, Kentucky
 A. L. Smith, M. D., Corry, Pennsylvania
 Harry M. Thometz, M. D., Chicago, Illinois
 Norman E. Titus, M. D., New York, N. Y.
 Albert F. Tyler, M. D., Omaha, Nebraska, and
 Mel. R. Waggoner, M. D., Cedar Rapids, Iowa.

Several other physicians skilled in physiotherapy have promised to be present and to lend their assistance. These meetings will be open to all physicians of standing. There will be no charges, and no obligation incurred by attending.

The complete program, which will appear in these pages in a subsequent issue, has been arranged with but one object in view—to promote greater efficiency in this work, and the entire proceeding will be strictly informal; allowing the greatest freedom for questions and answers.

THE DATES—OCTOBER 20th to 24th, 1924—Inclusive
THE PLACE—THE LOGAN SQUARE MASONIC
TEMPLE, at the terminus of the Logan Square
Metropolitan Elevated Line, CHICAGO, ILL.

It is earnestly requested that registration be made at once. While Auditorium facilities are almost unlimited, certain preparations must depend upon the number in attendance. This meeting to be held under the auspices of

H. G. FISCHER & COMPANY, Inc.
 Address the Secretary of Arrangements at
 2333-43 Wabansia Ave., Chicago, for further details.

tive, scientific—would be gladly accepted. And, among the ranks of workers in physiotherapy, there must be plenty of men who are capable of making such observations and writing them up. What is wanted in this field, is not enthusiasm, but systematic work and rigid reasoning.

A few such articles from time to time, appearing in our State and District Medical Society publications, would very quickly attract the attention of the medical world to physiotherapy, and change the tone of its voice in speaking of this work. And, until systematic and accurate clinical observation begins to be reported in reputable current medical literature, physiotherapy will always be a cinderella.

Let us all get to work, we who are convinced of the value of these methods, and discuss them in our favorite medical journals and meetings, with the same scientific attitude that we hold toward the rest of medical knowledge.

Respectfully,

MILES J. BREUER, M. D.
LINCOLN, NEB.

Treatment of Paralyzed Muscles in Hemiplegia

(The following, from F. H. Morse, M.D., of Boston, Mass., is his reply to a letter received by us from one of our Magazine readers.)

Dear Doctor:

"I received a letter from H. G. Fischer & Co. of Chicago, asking me to write to you direct about the treatment of paralyzed muscles in hemiplegia. I am receiving many similar letters from doctors all over the country and it makes me wish I had more time to quickly finish my book on 'Galvanism and Wave Currents.' However, that is in the future.

"The treatment following hemiplegia resolves itself into maintaining the highest degree of nutrition over the paralyzed areas, and at the same time maintaining sufficient passive muscle exercise to prevent atrophy and functional inactivity. The book, 'The Therapeutics of the Morse Wave Generator,' which you have, will give you the information on the treatment of paralysis in general, but which might not apply to the case in question.

"The average case where nature is making an attempt at restoration by showing some improvement in muscle movements, use a mild current of galvanism; if the arm to be treated, one electrode at the occiput (positive) and the negative on the wrist using Cam No. 1, resistance three, 3 to 5 M. A. In about ten minutes the arm will have become warm from the passage of the current, and in a better condition for exercise. Leave the wrist electrode in place and put one electrode (about 4x5 inches) in the upper dorsal region, using Cam No. 2 on the alternating current up to the point of reasonable toleration. Exercise not over five minutes for fear of local exhaustion. A similar procedure can be used down the paralyzed leg from the lumbar nerve to the ankle by using, possibly, Cam No. 6, 7 or 8 for the exercise part on the A. C. This would be routine technic in the average case, all of which may be varied according to existing conditions."

The Treatment of Pyorrhea Alveolaris

(The following letter was written by W. B. Chapman, M.D. of Carthage, Mo., in response to an inquiry from one of our good customers.)

Dear Doctor:

"I have your inquiry addressed to H. G. Fischer & Co., relative to the treatment of pyorrhea alveolaris by Diathermy. As advised by Mr. H. T. Fischer, the location and nature of the disease is such that it cannot be treated to advantage by Diathermy. However, pyorrhea alveolaris is greatly benefitted by actino-therapy, and where the gums have not receded too greatly, the condition can be cured.

"The technic is as follows:

"Remove all tartar, fragments of food, etc., from the teeth, passing silk between them, and rinsing the teeth and gums thoroughly before beginning treatment. All abscessed teeth, crowns, roots, and other sources of infection must be removed.

"Charge the water-cooled quartz lamp and allow it to run for five minutes before beginning treatment. The water should be turned on so that it flows steadily, but without force, through the lamp. Never allow it to flow with enough force to raise a column of water more than one-inch above the end of the drain.

"Using a straight quartz glass tooth applicator treat all diseased areas on the gums in front of the teeth allowing the ray to penetrate between the teeth. Give from one to two minutes to each spot. More than two minutes will irritate the gums and make the condition worse. After all of the diseased areas in front of the teeth have been treated, take the

bent quartz tooth applicator and treat the gums behind the teeth in the same manner. It is better to treat the gums every day using a one-minute time exposure than to give a more severe treatment with longer intervals in between.

"The patient should be given minute instructions regarding the care of the teeth, and should use a very mild toothpaste and a soft brush. Too vigorous rubbing with a stiff brush tends to break down the peridental membrane and encourage the spread of the infection. As a mouth wash, I recommend ordinary salt water."

Very truly yours,

Auto-Condensation Treatment

(Here is another splendid contribution from our good friend, Dr. W. B. Chapman, also written in answer to inquiry direct to us, and which we felt should be answered from a medical source.)

Dear Doctor:

"I have your inquiry directed to H. G. Fischer & Company of Chicago, relative to auto-condensation treatments, etc. I find that Mr. Fischer has answered all of the questions very fully with the exception of the cause of the oppression observed by patients after auto-condensation treatments wherein the plate was applied directly over the precordium.

"The heat energy that is generated within the tissues of the body due to the very rapid transmission of electrical impulses through same, stimulates automatically the vaso-dilator nerve endings within the walls of the smaller blood vessels. This is what causes the fall in blood pressure that is observed during such treatments.

"In applying the smaller electrode directly over the precordium, you concentrate a great deal of electrical energy within a small area that contains the cardiac plexus which is rich in vaso-dilator nerve fibres. These nerve fibres are distributed to the heart, and other highly vascular organs, and when stimulated, cause an immediate congestion of the splanchnic region with a consequent fall in blood pressure. This disturbance to the cardiac plexus is transmitted automatically to the gaval system and sets up similar reactions within the brain so that a feeling of lassitude or oppression results. I can explain this reaction in detail but it would take too long. I will say, however, that the reaction is not without danger, and I seldom apply the plate electrode above the heart except in strong robust patients, and then I watch them very carefully. I have had a few patients break out in a profuse sweat and require cardiac stimulation where this treatment was carried out too vigorously".

DIATHERMY IN INTERNAL MEDICINE

In an article entitled "Diathermy in Internal Medicine" published in The Journal of the American Medical Association, July 26, 1924, p. 266, Edward W. Jackson, M. D., Rochester, N. Y., says that many persons complain of heart pains. He believes that a large percentage of these pains are diagnosed erroneously as angina pectoris. His examination frequently discloses the cause of the pains to be a neuralgia or myalgia of the chest wall. The slow and often unsatisfactory results obtained in treating these conditions with rest, medicines, conductive and convective heat, and other time-honored remedies, led Jackson to investigate diathermy, the only method he knows of whereby it is possible to apply physiologic heat to tissues beneath the surface. Jackson emphasizes the fact that a proper technic is as important in diathermy as in any other therapeutic measure. In fact a better judgment and a broader general knowledge of medicine are required in the proper application of diathermy and in the selection of cases for treatment, than in most other therapeutic measures.

In all, 1,470 treatments were given by Jackson to sixty-one patients, divided among the various body systems as follows: circulatory, 526; nervous, 266; respiratory, 54; joints, 352; muscular, 223, and urogenital, 39. Full use of the various diagnostic measures was made in the study of these patients. When found, foci of infection were removed, but diathermy was not withheld pending a clearing up of the foci of infection. This, Jackson says, is important, since during the treatment prompt relief was obtained in many painful conditions, thereby proving diathermy of diagnostic value, and lastly, when successful, of economic value in curtailing further diagnostic and therapeutic expense. Thirteen selected hypertensive patients, who had been under Jackson's care for three or more years, agreed to cooperate for the purpose of investigation for more than one year. The treatment for a year or more had been a simple general diet; rest, including a midday rest period, and care in

avoiding emotional disturbances; good elimination, and hygiene. During this period of what Jackson terms rational treatment, the patients had been seen every month or two and the blood pressures had averaged remarkably uniform for each case.

The types into which these cases fall are: (1) climacteric, five; (2) essential hypertension, three; (3) nephritic, three, and (4) arteriosclerotic, two cases. To avoid unfavorable emotional and physical disturbances, these patients were treated in a quiet, darkened room; tight clothing was loosened and they reclined comfortably on the dielectric pad. The office type Tycos instrument was used, the sleeve being left in situ during the treatment. Before starting the treatment, blood pressures were taken at intervals of from one to three minutes until no further lowering was recorded. This usually required from five to ten minutes. The treatment was then given. Until the final pressure reading was made, every precaution was taken, so that the patient was not disturbed. The d'Arsonval circuit was used.

The length of treatments varied from one-half to one hour, mostly the latter; the frequency of treatments varied from one to five weekly. Jackson found that too prolonged treatments with high milliamperage were weakening. Under ideal conditions of the application of diathermy to reduce hypertension, the patient should rest in bed for several hours directly after treatment. The retention of the heat in the body tissues would thus be aided and its physiologic action prolonged and augmented. Jackson's investigation had now been carried on for more than a year. It had been determined that, with careful attention to details, diathermy would reduce arterial hypertension, and, as long as the treatments were continued, would keep the pressures within safer limits.

Properly applied, the treatments were time consuming and harassing. Therefore, Jackson entered into an agreement with eight of these patients, whose home con-

veniences were such that sedative baths could be taken at their pleasure, to compare the action of baths with his records of diathermy in reducing their pressures. The physiologic effects of such a bath, under the prescribed conditions, followed by nocturnal bed rest for from eight to twelve hours, were superior to other methods of hydrotherapy in the treatment of hypertension.

Invariably the reduction of pressures following these baths compared favorably with diathermy. Restlessness, insomnia and weakness followed over-treatment, as with diathermy, and it was necessary to adjust the frequency and duration of the baths and to caution that the proper temperature of the water be observed. In time, these baths prove irksome and are likely to be indifferently performed by the average patient. Even with this selected group, frequent observation and evidence of the physician's deep interest were necessary to encourage them. There is a minimum to which any given case of compensatory hypertension may be reduced without provoking symptoms and signs of circulatory failure. As long as the fall of the pressures is unaccompanied by circulatory or nervous discomfort, whatever the method used, it is safe to proceed cautiously with attempts to lower them.

Baths and diathermy, singly, or when wisely combined and adjusted to fit the particular patient, are equally efficient in reducing hypertension. This reduction persists as long as the treatments are continued, provided the other important factors—rest, diet and hygiene—are faithfully observed. When baths and diathermy are stopped or indifferently performed, the pressures gradually creep up. A proper application of diathermy is but half the treatment; the other half is the after-care. Five patients with organic angina, all men in late middle life with a chief complaint of substernal pain, believe that diathermy has been of definite value to them, their attacks being less frequent and severe. Jackson is convinced that the symptomatic relief obtained has justified its use. If complete relief

is not obtained from diathermy, a source of infection must be located elsewhere in the body and removed. The results obtained from 1,470 applications of diathermy to sixty-one patients suffering from various conditions common in internal medicine have convinced Jackson that diathermy is of value for the reduction of arterial hypertension, but sedative baths under carefully prescribed conditions are equally helpful. Diathermy has given symptomatic relief in many painful conditions more promptly than was obtained under usual treatment, and it is an addition to other therapeutic resources Jackson recommends that diathermy be studied in hospitals and large clinics to define its scope, indications and limitations.

Blind Radioist Recovers Sight While at His Set

SYDNEY, N. S., July 24.—Hugh Roper, 87, totally blind, experienced an almost complete recovery of his sight for a period of 48 hours as a result of electrical vibrations received while listening in on a radio concert.

On the morning following, Mr. Roper was able to distinguish the hour of day on a small clock placed some distance away.

□ □ □

Physiotherapeutic Lectures at Omaha

A splendid program has been arranged for October 6th, 1924, in the Lecture Hall, 1118 Farnam Street, Omaha, Nebr. The speakers of the day will be:

B. B. Grover, M.D., Colorado Springs, Colo.,
Disraeli W. Kobak, M.D., Chicago, Ill.,
R. W. Fouts, M.D., Omaha, Nebr.,
G. A. Fleischman, M.D., Des Moines, Iowa,
Norman C. Prince, M.D., Omaha, Nebr.,
M. Wood, M.D., Tekamah, Nebr.,
W. L. Ross, Sr., M.D., Omaha, Nebr., and
W. D. Chessney, M.D., Milton, Wis.

This meeting will be followed with a banquet and a very interesting evening session.

All physicians are invited to attend; no cost, no obligation.

The Role of Physiotherapy in Low Back Conditions

By FRANK B. GRANGER, M.D.

Boston, Mass.

That the diagnosis and treatment of disabilities of the low back type is unsatisfactory, goes without saying. You have had excellent papers on their etiology and pathology, yet in many cases the diagnosis is difficult to make and consequently to institute the proper treatment is still more perplexing.

In traumas of the back the victim usually falls into the hands of one or more of the following classes:

1. The casual treatment of the casual physician where chloroform linament and a few strips of adhesive suffice, whether the pathology be a crushed vertebrae, hypertrophic spine, ligament or muscle injury.

2. The osteopath or chiropractor who in a few cases succeed, but who in many others increase the disability and perhaps add their share to the existing trauma.

3. The orthopedist whose idea of support, rest and fixation are good and who links the X-ray with careful physical examination, but who in some cases is obsessed with the idea of rest and fixation to such a degree that atrophy and loss of muscle tone markedly retards recovery.

4. The physiotherapist who, too frequently, knows little and cares less for proper fixation and rest and who attempts often with success to relieve muscle spasm, to produce an active hyperemia, with consequent tissue drainage, but who also at times unduly stimulates structures needing for a short time rest and sedation.

It is evident, therefore, that success in treatment depends on: first, a careful and correct diagnosis; second, intimate team work between orthopedist and physiotherapist.

In all traumatic cases, with which I suppose this meeting is chiefly concerned, it is presupposed that there has been excluded postural defects with their consequent relaxation, congenital anatomical defects, and all abdominal pathology which might cause a somewhat similar clinical picture.

The traumatic cases which come to the Department of Physiotherapy at the Boston City Hospital exhibit muscle spasm as their predominant factor.

Relieve the spasm, add what fixation is necessary, if necessary, for a short time, institute what may be called general tonic measures, and as soon as possible employ proper voluntary muscle exercises not only to restore muscle tone but also to relieve the mental inhibition that exercise or work is impossible.

Many of the cases we see are found, on X-ray examination to have had an old hypertrophic spine, which the trauma cause to flare up. Once in a while, we find the classical hitherto unrecognized vertebral crush. Rarely indeed, but still quite definitely, we find a true sacroiliac.

Treatment.

1. Hypertrophic spine aggravated by trauma. In these cases diathermy (internal baking) seems to give the quickest relief. This is due probably to the active hyperemia which it produces locally with consequent tissue drainage, and to the marked muscular relaxation it induces muscle spasm which is not of central origin.

Technic. Place a metal electrode, generally 2x10 inches over the lumbar region of the spine, while anteriorly there is held on the abdomen by means of a sandbag or the hands of the patient a 10x12 inch metal electrode. Treat for at least 20 minutes with whatever current strength the patient can stand without discomfort. This will usually register on the meter from 800 to 1200 milliamperes. Of course if there is the slightest degree of pricking it means that good contact has not been secured, and poor contact may mean a burn.

If pricking does occur the area where it exists should be firmly pressed against the skin. If this does not remedy it, the electrode should be reapplied. At times when the pain is severe, galvanism, with the positive pad posteriorly and the negative anteriorly for 25 to 30 minutes, 15 to 40 milliamperes, will accentuate the effects of diathermy. In some cases, betimes, a low back brace insures a certain degree of physiological rest. If the process is fairly old, and the exacerbation not too acute, deep massage, vibration, the static wave current or the slow sinusoidal will shorten the time of disability. At times, also the application of radiant heat will, by dilating the cutaneous capillaries, deplete the enlarged deeper muscle and relieve pain and stiffness. By some of the above methods the classical six months minimum may be materially lessened. Here again it is assumed that all possible foci of infection have been eliminated such as teeth, tonsils, sinuses, gall bladder, prostate or pelvic infection, etc.

2. Sprain of the lumbo-sacral or lower lumbar joints. These are the so-called "lifting strains" where the patient feels that something gives way and perhaps hears a snap. These are generally ligamentous or muscle tears. The ligamentous ones are characterized by soreness and tenderness which are deeper situated. Here again, muscle spasm stares us in the face. Pain is elicited by lumbar movement. The erector spinae muscles, deep spinal ligaments or the ligaments which are inserted about the sacrum or sacro-iliac joint, are chiefly involved. The muscle spasm is naturally a reflex one due in part to nerve pressure, which pressure is caused by the resultant edema or possibly hemorrhage into the soft tissues. Physiological rest, an adequate back support and immediate physiotherapeutic measures should and do lessen the duration of disability. Again diathermy with larger electrodes than hypertrophic arthritis, but with the posterior one appreciably smaller than the anterior; followed by the sinusoidal or the static wave current, has given us the best results.

3. *Sacro-iliac strain often associated with sciatica.* Here, manipulation followed by short *adequate* strapping, diathermy or baking, sinusoidal or static wave current, and deep massage or vibration, should achieve quick results.

4. *Myositis.* Though this diagnosis has been overworked at times, yet inflammatory processes do occur in muscles; and true myositis is quickly relieved by radiant heat, deep vibration, massage, and static sparks. At times diathermy or the slower heating process of galvanism, with a positive pad over the contracted muscle will also achieve the same result.

5. In spinal infections, such as tuberculosis or osteomyelitis, in addition to appropriate orthopedic and surgical measures, ultra-violet light therapy given both locally and generally, at least deserves a trial.

6. *Periostitis.* A few cases have shown under X-ray examination, a definite periostitis which has persisted and which has caused severe pain. Either because of or in spite of diathermy, a fair percentage of such cases have promptly recovered.

7. *Malingers.* We get them at times. It is hard to say a man hasn't a pain in his back just because we can find no objective evidence. In most of these cases, the greenback has all other therapeutic measures beaten by a large margin.

From *The Industrial Doctor*.

□ □ □

WHY?

I like my dentist. He's a friend I would not do without. How quickly he relieves my pain! He knows what he's about. My doctor, too, is surely good at curing human ills. He always knows just what I need of poultices and pills. Their offices they have equipped with up-to-date Fischer machines;

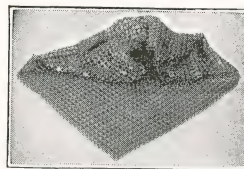
But tell me why will they display such ancient magazines?

(With apologies to A. D. Ihrle.)

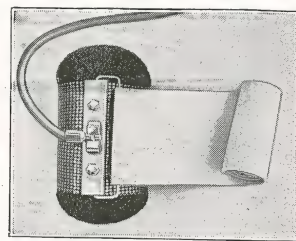
Smooth-Link Mesh Electrode Material

It is quite significant to note that while nearly three-quarters of a million square inches of our German Silver Mesh Electrode Material are in use throughout the country, most of the recent orders are "repeats." It seems that "once tried, always used" fits exceptionally well in this case, as those who are using Mesh continue to buy more of it.

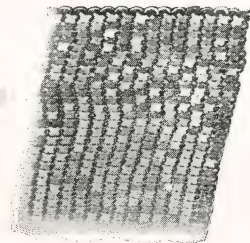
We feel very sure that a number of our readers would be glad to look through our latest No. 14 Accessory Catalog in which this is only one of hundreds of interesting items. Just send a card, and we will mail catalog at once.



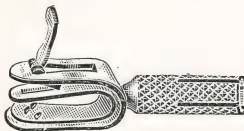
A Mesh Electrode



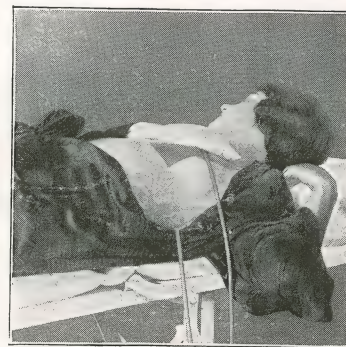
Combination Mesh and Rubber Sponge Electrode



Section of Electrode showing exact size of links



Mesh Electrode Clamp.

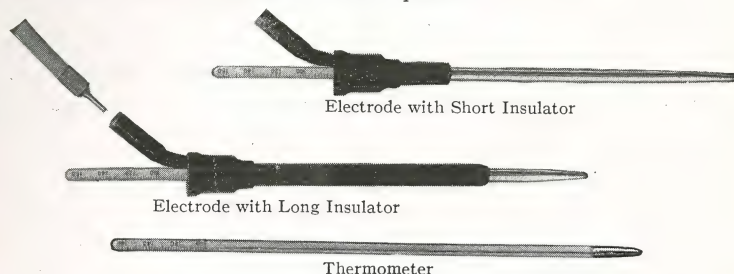


Application Mesh Electrode

The Corbus Endocervicitis Electrode

For the treatment of Gonorrhoeal Endocervicitis with Diathermy. Thermometer registers degree of heating obtained, Fahrenheit.

Instrument consists of four pieces.

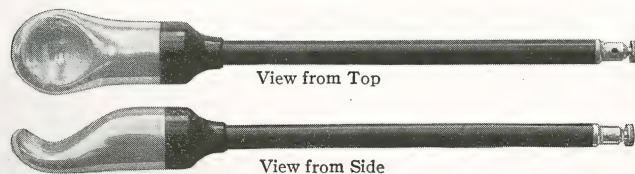


Cat. No. 1275—complete with thermometer \$12.00
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Cat. No. 1276—thermometer only *Code COTHER* . . . 2.00

The Fischer-Chapman Endocervicitis Electrode

Designed along scientific lines, with size and shape of polished metal end to properly engage the lips of the cervix. The shank, or handle, is made of hard rubber. This electrode is to be used with Diathermy Current.



Cat. No. 1885—as illustrated . . . *Code CHAPEL* \$6.50

The Waggoner Physiotherapeutic Lecture Courses

By Mel R. Waggoner, Cedar Rapids, Iowa

There will be two such classes held in the month of September

KANSAS CITY, MISSOURI

September 15th to 20th

CHICAGO, ILLINOIS

September 22nd to 27th

and

MINNEAPOLIS, MINN., Sept. 29th to Oct. 5th

Personally Conducted Courses, Clinics, Lectures on

Rectal, Colon, Pelvic and Abdominal Diseases

For Details, Fee, Etc., Etc., write

MEL. R. WAGGONER, M. D.

Cedar Rapids, Iowa

DOCTOR WAGGONER will also appear during the balance of 1924 at
Chicago, Illinois, October 20th to 24th.
Chicago, Illinois, October 27th to Nov. 1st.
Charlotte, North Carolina, November 10th to 15th.
New York, New York, November 17th to 22nd.
Cleveland, Ohio, December 8th to 14th, etc.

—Watch for Announcements in "Fischer's Magazine"

A PAGE OF FUN



Jock and Janet were sweethearts and were sitting together one night in the front parlor. Jock was silent for a long time.

"A penny for your thought," said Janet.

"I was thinking I would like a kiss," said Jock.

Janet gave him one.

Again he sat in silence for a long time.

"Were you thinking you would like to kiss me again, Jock?"

"Na, I was thinking you didna gi' me the penny."

□ □ □

A dairy maid milked the pensive goat,

And, pouting, paused to mutter
"I wish, you brute, you'd turn to milk,"

And the animal turned to butt her.

A teddy bear sat on a cake of ice,
'Twas cold as cold could be.

He soon got up and walked away,
"My tale is told," said he.

□ □ □

Wifie: "I suppose now you wish you were free to marry again?"

Hubbie: "No—just free."

□ □ □

Bride (consulting cook-book):
"Oh, my, that cake is burning and I can't take it out for five minutes yet!"

□ □ □

She: "Your new furs are magnificent, my dear; what did they cost you?"

Her Friend: "Three fits of hysteria."

□ □ □

The teacher was examining a class in physiology: "Lucy, will you tell us what is the function of the stomach."

"The function of the stomach," the little girl answered, "is to hold up the petticoat."

□ □ □

Conductor: "Watch your step, Miss."

Flapper: "It's not necessary; there are several sapheads behind doing that!"

**BELIEVE IN YOUR OWN ABILITY
TO DO BIG THINGS.**

**ONLY BY HAVING FAITH IN YOUR-
SELF CAN YOU COMPEL OTHERS
TO HAVE FAITH IN YOU.**

Program for Our
**Monthly Physiotherapeutic
Meeting**

Monday, November 10th, 1924

L. C. SAMMONS, M. D., Shelbyville, Ind.

"Physiotherapy in General Practice" 10:00 to 11:00 A. M.

WM. E. HOWELL, M. D., Chicago, Ill.

"Ease and Effectiveness of
Electro-Coagulation Operations". 11:00 to 12:00 Noon

D. W. KOBAK, M. D., Chicago, Ill.

"Diathermy and Sinusoidal
as Complimentary Technic" 1:30 to 2:30 P. M.

ABRAHAM R. HOLLENDER, M. D., Chicago, Ill.

"The Influence of Medical
Diathermy on Tinnitus Aurium" 2:30 to 3.15 P. M.

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

"The Scope of Indirect Diathermy
in Certain Eye Conditions" 3:15 to 4:00 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.

**We have ample space for
all of you. Remember the
date and come to our Lec-
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Rooms at**

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FISCHER'S MAGAZINE



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OCTOBER, 1924

THE SECRET OF SUCCESS
IS CONSTANCY OF PURPOSE.

Fischer's Magazine

*Devoted to the advancement of the Science of Electro-Physio-
Therapy and to the interests of those earnest and enlightened
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Leaders are Learners

IT has been said, and no doubt widely believed by the laity, that no man gets a new idea after thirty—or thirty-five, or forty. The age varies, but the statement is just as gravely erroneous, it seems to us, though the limit be set at seventy—or ninety.

That there are people to whom new ideas come as unwelcome and disturbing visitors, there can be no doubt. You will find them of all ages and all professions. But you will never find a *leader* among them.

For leaders are learners, all their lives long. Out of their daily experiences, out of their contact with others, out of the books and magazines and treatises they read, successful men are constantly drawing a fund of new knowledge that can be applied in the conduct of their professions and their lives.

Have you ever noticed that one of the common characteristics of big men is their inquisitiveness? They always, one and all, are looking for the why and wherefore of things. Make a statement to one of them, and, often as not, he will question it; not because he doubts the truth of what you say, necessarily, but because he wants more details, a more complete and accurate picture of the facts. Yes, leaders are learners. But learners, too, of the essential things. All of us learn, from day to day, and from hour to hour. Our

minds entertain a constant procession of new thoughts. Whether those thoughts are of baseball, for example, of society, or of our professional work, is the important thing.

That is where the real leader has the advantage of the rest of humanity. Whether it is born in him or he has acquired it through hard experience and self direction, he possesses clear knowledge and clear vision in connection with the one big thing that to him is worth while.

And that thing is—leadership and success in his chosen profession.

Diathermy

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Boston, Mass.

Associate Editor of the *Physiotherapy News Bulletin*

Diathermy, or internal baking, has masqueraded under a number of synonyms such as thermo-penetration, thermofaradic (as its name indicates, a poor diathermy), endothermy, etc.

While it is a high frequency current, ordinarily of the D'Arsonval type with a fairly high voltage and milliamperage, yet in practice it varies widely, dependent upon the construction of the high frequency apparatus employed. It is evident that a machine wound to give a high milliamperage and a relatively low voltage will have less ability to overcome resistance and consequently less power of deep tissue penetration than one constructed to deliver a much higher voltage with a somewhat less milliamperage. It should have voltage enough, however, to insure its passage in parallel lines from one electrode to the other. In all other electrical currents, except perhaps the static, the electrical lines of force do not go in straight lines through the tissue from electrode to electrode, but are diffused in widely divergent ones, and are only concentrated at the points of contact of the electrodes.

Hence it necessarily follows that the deeper structures are much less under the influence of the electrical current. Diathermy, on the contrary, provided as stated above the voltage is sufficient, flows in a straight line from electrode to electrode and the intervening tissues are generally well heated with of course a greater intensity of heat nearer the smaller electrode. It is this process of generating heat within the tissues that makes diathermy so valuable. All other forms of heat are to a great degree blocked in their penetration by the skin, whether they are conductive heat such as the hot water bottle or electric heating pad, or convective heat such as incandescent light applicators or the arc light. Diathermy, however, is true converse heat, that is heat generated in the tissues; hence it penetrates deeply and to a great degree uniformly.

The penetration and clinical results of the infra-red rays, despite generous advertising is still a mooted question.

Diathermy then is a high frequency current ordinarily of the D'Arsonval type with sufficient voltage to overcome tissue resistance, and with sufficient amperage or quantity to heat, because of internal tissue resistance, the structures through which it passes, as it flows in straight lines from one electrode to the other.

Diathermy may be divided into medical and surgical diathermy. Surgical diathermy, which includes electrocoagulation and dessication, will not be considered in this paper.

Medical diathermy may be divided into direct and indirect diathermy. Auto-condensation is the most important example of the indirect type.

The methods of application of direct diathermy are the lateral method, the double cuff method, and the cuff and water method.

Of these the first, the lateral method, insures the greatest concentration of heat to a given local area in the shortest time. The cuff method is also efficient but requires a much

longer time of application. The cuff and water method is the least efficient. It is ordinarily used where the toes or fingers are to be diathermatized.

Materials

Only a metal contact should be employed such as block tin, preferably 22 gauge Crooke's metal, organ pipe metal, limpit metal, or metal mesh. The interposition of moist cotton, felt, or asbestos increases greatly the chances of a burn. Either one of two things may happen. The pads may become dry, more resistance ensues, carbonization takes place, and the tissue is showered with fulgeration sparks; or as has happened with the asbestos type the metal back may become disintegrated and the area of contact be thus greatly reduced in size with consequent concentration of current strength, and an electro-coagulation of the part under treatment. Great care should be taken in preparing metal electrodes. They should not have any sharp edges. They should be perfectly smooth so that no undue pressure might be exerted. If they have been used before, good contacts should be ensured by smoothing them with a squeegee, or even a large static spark ball. In hospital practice the skin is well lathered before the electrodes are applied. In the office, where there is presumably less rush and aides with wider experience, the electrodes are dropped into basins of hot water in order that the metal may feel warm, and are placed in position with only the small amount of moisture present which may cling to them. If the current is gradually turned on, the resistance of the skin should be overcome without any discomfort to the patient. If the part is hairy it should be well lathered or shaved. The electrodes should then be bound on with an elastic bandage such as the Ace. A paper or cotton bandage may also be employed. I ordinarily use a cotton bandage or a rubber strap (old inner tubes are handy for that purpose). The contacts should be exact, and if the patient complains of burning or prickling the metal should be firmly pressed against the skin over the area in question.

If this does not give relief, the metal should be reapplied. This is important, for if the metal is not in close contact with the skin, the passage of minute sparks will in time either fulgerate or coagulate, and a high frequency burn will ensue. These burns are not ordinarily harmful, unless they are deep enough to cause a scar, but they are bad technic. If by any chance the skin is anesthetic, the greatest care should be employed. Much has been written concerning the swelling of the tissues under the diathermic electrodes. I think that this has been overstated, and it is much better to bind on snugly enough to secure good contact, thus avoiding a burn. As stated above it is better to use a bandage which is somewhat elastic. A gauze bandage may exert undue pressure on some part, and from this excessive pressure and the resultant ischemia, a burn may result. For this reason also it is well to avoid bony prominences.

Dosage

From 50 to 100 milliamperes per square inch of contact is ordinarily sufficient. If the arteries are sclerotic 50 milliamperes is better than 100.

Spark Gap

The spark gap should be in good working order, special attention being paid to its cleanliness. It is better to have the spark gaps fairly close and to increase the amount of current by allowing more to come in from the alternating current mains rather than to use a wide open, spluttering spark gap as thereby a faradic character may be imparted to the diathermy which would not only be more disagreeable to the patient, and less current could be used, but it would also act as a stimulating diathermy rather than as a sedative one.

Time of Treatment

This cannot be exactly interpreted in minutes as the result and the reaction are the main factors. In general it takes at

least 20 minutes to heat thoroughly a part. With the double cuff method the treatment should be continued until the skin between the inner edges of the electrodes becomes hot. This may take from 20 to 60 minutes.

Frequency of Treatment

This depends on the underlying pathology. For the relief of pain, or in a pneumonia, one or two treatments a day may be necessary. In non-union or delayed union of bone, two or three times a week will suffice.

Some Special Indications for Diathermy

1. Non union or delayed union of bone. Here diathermy, where a fair degree of fixation of bone can be secured, is of value. Wherever possible the lateral method is used. If apparatus can not be removed, the cuff method is best.

2. Bursitis, especially subdeltoid with calcification. Under diathermy and chlorine ionization through the shoulder followed by massage and gentle manipulation the calcified bursae disappear.

3. Hypertrophic arthritis. Here, provided overgrowth of bone is not a mechanical obstruction, and even though the X-ray picture remains unchanged, prompt symptomatic relief is usually obtained by diathermy and ionization. Numerous cases physically incapacitated are returned to gainful occupation for periods of many months.

4. Pneumonia. An internal poultice such as is afforded by diathermy, the increased local temperature (nature's method), the increased hyperemia and drainage, and the augmented phagocytosis all seem to mark the use of diathermy as a rational procedure. Often the improvement in the pulse, disappearance of cyanosis, and the decrease of pain, is coincident with the treatment. Treatments may be given twice daily.

5. Neuritis. Frequently a very acute neuritis will be more quickly relieved as regards pain by diathermy than by any other method. The double cuff technic is usually employed. In brachial neuritis, not infrequently the cervical and upper thoracic spine is affected, hence in such cases I employ the following technic: Suppose it is the right arm—place a semicircular strip of metal over the left side of the spine, and a cuff over the upper arm. Diathermatize until the shoulder is hot, 600 to 900 milliamperes. Remove the cuff from the upper arm and place it around the wrist continuing until the whole arm is hot. The first treatment will often cause increased pain, but this apparently is not a bad sign.

6. Spasticity. This is best treated by diathermitizing the appropriate centers in the spine, and then by the double cuff method, heating the spastic muscles.

7. The contra-indications to diathermy are two:

1. Pus without drainage.
2. Lesions where there is likelihood of hemorrhage.

Diathermy: A Specific for Gonorrheal Epididymitis

BUDD C. CORBUS and VINCENT J. O'CONOR
Chicago, Illinois

Gonorrheal epididymitis occurs in from 20 to 30 per cent of all cases of gonorrhea. It is more prevalent in dispensary than in private practice. This painful and destructive complication, in an economic way alone, represents the sum total of time lost in 90 per cent of the cases of specific urethritis.

During the past seventeen years the management of this condition has received serious and more detailed consideration from urologists in general but particularly from American urologists. This was largely stimulated by the work of Hagner, Bazet and Belfield.

The time honored method of treating this class of cases by elevation or strapping of the testicles, rest in bed, and the external application of heat or cold, incapacitates the patient for from five to fourteen days and may later necessitate operation to drain the infected epididymis.

The interest in this troublesome situation, from a surgical point of view, has become so keen that few patients escape the procedure of epididymotomy. This is not only true of patients in private practice but in most dispensaries as well. The results of this operation, in a large proportion of cases, have been excellent but the patient must be laid up at least three to ten days.

While the outcome of an individual case of gonorrheal epididymitis is rarely in doubt, the disability which accompanies the usual methods of treatment is annoying and embarrassing both physically and financially.

It is apparent that any method which can abort the attack, or stop the pain and absolutely eliminate the usual incapacity, would be a decided step forward in this type of therapy.

Knowing that the gonococcus is instantly destroyed at a temperature of 108° F., it occurred to us that if a suitable instrument could be devised we could induce sufficient heat within the body of the epididymis to destroy the gonococcus in its local invasion, stop the pain and abort the attack. This knowledge was gained by an experience of several years in the application of diathermy in the treatment of cancer and in gonorrheal endocervicitis. The results of these studies are published elsewhere.

We have been so successful with this procedure that we believe we are justified in calling this method a specific for gonorrheal epididymitis.

Description of Instrument

The instrument as devised by one of us (B. C. C.) consists of a fiber clamp with curved arms, one of which is movable.

This movable arm may be fastened at any desired point by means of a lock-nut. Two concave discs are attached to the distal ends of the arms. These discs measure 4 cm. in width and 5 cm. in length, and are swiveled that they may be easily adjusted. Each disc connected to a binding post so bi-polar current may be applied. The electrode is rigidly constructed and, due to the self adjusting discs, is applicable to any size scrotal content.

Method of Application

The patient is placed in the recumbent position and the scrotal and suprapubic region exposed. Shaving soap lather is placed between the skin and the contact point of the electrodes. The entire body of the testis and epididymis is encased between the apposed electrode surfaces and heated uniformly by the d'Arsonval current. In order to effect the greatest degree of heat induction possible in the individual, the current is increased to the extent of cutaneous discomfort. When this point is reached the current is then reduced slightly so that no unpleasant sensation accompanies the treatment. Our routine has been to apply the heat for at least forty minutes, since even at 104° to 106° F. the gonococcus is killed during this time. In those cases seen during the first twelve to twenty-four hours of epididymal involvement by the gonococcus one such treatment has usually sufficed to check the attack and start the process of resolution. In those instances where the inflammatory reaction has been present for a number of days, three or four treatments on successive days have been sufficient to eliminate all untoward effects.

A very distressing funiculitis often accompanies the epididymal involvement and may persist after the symptoms of the latter have completely subsided. This is as quickly relieved by placing the instrument in a vertical position with one electrode over the globus minor and the other over the

region of the internal abdominal ring. This permits an induction of heat throughout the accessible portion of the vas deferens; this should be continued for forty minutes.

So mild is the attending inflammatory reaction following a heat treatment for gonorrheal epididymitis, that there is absolutely no hydrocele present. Both poles of the epididymis are distinctly palpable as hard painless nodules, this is rendered more distinct on account of the absence of any orchitis.

A Few Typical Case Reports (Quoted)

Case 1. R., aged thirty-five years, during the course of an acute urethritis motored several hundred miles in one day. That night his right epididymis became very tender and gradually enlarged. The next morning, August 2, 1923, when he presented himself the entire epididymis was swollen to five times normal size. There was slight accumulation of hydrocele fluid, temperature 101°, pulse, 110, leucocyte count 13,500. The patient was very weak and could hardly walk so great was the pain in the right testis and groin. It was imperative to his business interests not to be laid up that week because of a local convention. Diathermy for forty-five minutes was followed by complete relief from local pain. The following day the patient felt perfectly well. There was no local pain or tenderness although the lower pole of the epididymis was three times the normal diameter and very hard. The patient had no further discomfort and five days later his scrotal content seemed normal.

Case 2. H., aged twenty-three years, professional dancer developed a left gonorrheal epididymitis in the fifth week of an acute urethral infection. He presented himself, October 10, 1923. Left scrotum red and swollen to twice the normal size. Lower pole of the left epididymis was markedly swollen and so tender that palpation caused severe prostration. There was very slight hydrocele present. Temperature 100°, pulse rapid. Diathermy for one hour gave marked relief. The patient was very anxious to avoid prolonged absence

from the stage but was advised to remain in bed for the following twenty-four hours. A similar diathermy treatment was given the following day and complete subsidence of all pain, swelling and tenderness was noted on the second day. In spite of repeated warnings the patient persisted in doing his acrobatic dancing stunts for an aggregate of thirty minutes each day. The scrotal content was kept elevated by an elastic supporter. No recurrence took place and five days later both testis and epididymis were normal. The patient lost only one day of work.

Case 3. P., aged twenty-two years, presented himself October 1, 1923, with a left gonorrheal epididymitis of three weeks duration. Rest in bed, hot applications or tight suspensories had failed to do more than temporarily relieve the pain and swelling. The epididymis was twice normal size hard and painful on palpation. The vas deferens was half again as large as normal and was tender as far up as the external inguinal ring. Walking even with a well-fitting suspensory, was attended with a sickening pain in the left testis and groin. Diathermy for one hour gave no apparent immediate relief. Twenty-four hours later the pain left the epididymis completely and the patient declared on the third day that there was absolutely no discomfort. The acute swelling had entirely subsided four days later and there has been no recurrence.

These 3 cases are typical of the results obtained in a series large enough to justify our enthusiasm as to the specificity of diathermy for gonorrheal epididymitis.

Summary

Diathermy provides us with a method of inducing heat within the body of the epididymis, testis and spermatic cord. By using the electrode described above the gonococcus can be rapidly destroyed in its local invasion obviating prolonged inactivity or operative interference. Our results with this

(Cont'd. on page 14)

THIRD ANNUAL PHYSIOTHERAPEUTIC CONVENTION

CHICAGO, ILLINOIS—OCTOBER 20 to 24, 1924
at the LOGAN SQUARE MASONIC TEMPLE

H. G. Fischer & Company join with the following physicians in cordially inviting you to attend what we are confident will prove to be "the greatest meeting of Physiotheraputists of all time".

The following physicians of note will participate:

E. C. HENRY, M.D. Omaha, Nebr.
Chief of Staff, the Lord Lister Hospital—*Chairman*.

MILES J. BREUER, M.D. Lincoln, Nebr.

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

MAURICE H. COTTLE, M.D. Chicago, Ill.
Eye, Ear, Nose and Throat Surgeon at the American Hos-
pital.

LEO C. DONNELLY, M.D. Detroit, Mich.

EMILE C. DU VAL, M.D. Chicago, Ill.

R. F. ELMER, M.D. Chicago, Ill.
Attending Surgeon, Chicago General Hospital.

CHAS. H. FREDRICKSON, M.D. Chicago, Ill.
Attending Physiotherapist, the U. S. Veterans' Bureau.

DEAN W. HARMAN, M.D. Ames, Iowa

ABRAHAM R. HOLLENDER, M.D. Chicago, Ill.
Attending Eye, Ear, Nose and Throat Surgeon, the American
Hospital.

WM. E. HOWELL, M.D. Chicago, Ill.
Attending Physiotherapist at the American Hospital.

D. FRANK KNOTTS, M.D. Chicago, Ill.

DISRAELI W. KOBAK, M.D. Chicago, Ill.
Attending Physiotherapist, the Cook County Hospital.

GUSTAV KOLISCHER, M.D. Chicago, Ill.
G. U. Surgeon at the Michael Reese and Mount Sinai Hos-
pitals.

ARTHUR LA ROE, M.D. Newark, N. J.
Formerly of the U. S. Public Health Service and U. S. Vet-
erans' Bureau at Newark, Staten Island and New York.

ELLIS G. LINN, M.D. Des Moines, Iowa

FREDERICK H. MORSE, M.D. Boston, Mass.
Ex-president the American Electrotherapeutic Association.

ROSWELL T. PETTIT, M.D. Ottawa, Ill.
Physician-in-charge at the Illinois Valley Hospital.

CURRAN POPE, M.D. Louisville, Ky.
Medical Director the Pope Sanatorium, and Consulting
Neurologist and Physiotherapist to Saint Anthony's
Hospital.

A. L. SMITH, M.D. Corry, Pa.

HARRY EATON STEWART, M.D. New Haven, Conn.
Director New Haven School of Physiotherapy, formerly
supervisor Physiotherapy Bureau U. S. Public Health Serv-
ice, Washington, D. C.

HARRY M. THOMETZ, M.D. Chicago, Ill.
Assistant Surgeon the Illinois Eye and Ear Infirmary, and
late of the U. S. Government Service.

NORMAN E. TITUS, M.D. New York, N. Y.
Vice President American Electrotherapeutic Association and
New York Electrotherapeutic Society. Director of American
Academy of Physiotherapy. Director of Physiotherapy,
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ALBERT F. TYLER, M.D. Omaha, Nebr.
Professor Roentgenology Creighton Medical College, Roent-
genologist St. Joseph's Immanuel, Paxton and Douglas
County Hospitals.

MEL R. WAGGONER, M.D. Cedar Rapids, Iowa

Several other physicians skilled in Physiotherapy
have promised to be present and to lend their assist-
ance. These meetings will be open only to licensed
physicians of good standing. There will be no charg-
es, and no obligation imposed by attending.

This is the one meeting of the year that you cannot afford to miss!

original method have been so uniformly satisfactory that we feel free to describe it as one which is specific for gonorrheal epididymitis.

Jour. Urology.

Physiotherapy in Government Hospitals

The following extracts from General Order Number 68D, U. S. Veterans' Bureau, issued by Director Frank P. Hines, and bearing date of June 4, 1924, shows that physiotherapy and occupation therapy are now a constituent part of the medical care and treatment in U. S. Veterans' Hospitals and in Government Hospitals operated by The War, Navy and Interior Department, and even in the National Homes for Disabled Volunteer Soldiers.

"1. Physiotherapy and occupational therapy in U. S. Veterans' Hospitals are a constituent part of medical care and treatment and, like other clinical measures, shall be carried out under the supervision and control of the Medical Officer in Charge of the hospital, acting under the general direction of Central Office, which will control the appointments of personnel and the furnishing of supplies and equipment. In the case of contract hospitals such occupational therapy and physiotherapy personnel and equipment as are to be furnished by the Bureau shall be provided through the District Manager concerned, and shall be under his supervision, except as hereinafter specified. In the case of Government hospitals operated by the War, Navy, or Interior Departments, or by the Board of Managers of the National Homes for Disabled Volunteer Soldiers, these measures are carried on under the direction of such authorities, and by means of personnel, supplies, and equipment which they provide.

"2. Physiotherapy is the use of physical measures for therapeutic purposes, and includes massage, hydrotherapy, thermotherapy, electrotherapy, actinotherapy, therapeutic exercise, and remedial gymnastics.

"3. Occupational therapy shall include any occupation, mental or physical, definitely prescribed and guided for the distinct purpose of contributing to and hastening recovery from disease or injury, and shall include activities formerly carried on under the designation of pre-vocational training. Neither physiotherapy nor occupational therapy shall be applied except as prescribed by medical authorities. The term "Reconstruction Center" and the title "Educational Director" shall be discontinued, and the head of the Occupational Therapy Service shall be designated as the Occupational Director.

"4. In U. S. Veterans' Hospitals the Medical Officer in Charge, unless he performs such duties himself, shall designate some medical officer especially qualified in physiotherapy to have supervision of that activity whenever such officer is available. The ranking physiotherapy aide shall have charge of the administration of physiotherapy under the direction of that officer. The same officer, or some other especially qualified in occupational therapy, shall when available, be designated by the Medical Officer in Charge to supervise that activity, unless the Medical Officer in Charge performs such duties himself. The Occupational Director shall have charge of the administration of occupational therapy under the direction of that officer. When no officer is especially assigned to have charge of these activities, the ranking physiotherapy aide and the Occupational Director shall be responsible to the Medical Officer in Charge for the proper conduct of their respective departments. * * *

□ □ □

Until we acquire a more definite knowledge of the causes of hyperpiesis, its treatment must be more or less empirical. However, during the first stage auto-condensation has proven satisfactory.

Prostatitis

Question received:

"Gentlemen:—

In some treatments of Prostatitis both acute and chronic, with diathermia, we have failed to get results. Can you give us any points as to why? Is it the machine or the operator, or both? Have tried every technic described and with no results. This same thing has occurred in some cases of acute arthritis in the knee. In the ankle and wrist we have secured wonderful results. In epididymitis, our paper speaks for that. As you will recall, we are using your Portable at both hospitals. Any suggestions will be more than appreciated."

Answered by W. B. Chapman, M. D. of Carthage, Mo., as follows:

"Dear Dr. Peacock:—

Your inquiry to H. G. Fischer & Company of Chicago has been referred to me. I presume that they have already supplied you with my little pamphlet entitled 'Electrotherapy in Prostatitis,' and I hope that you will read it carefully. In case you have tried this technic without results, I would examine the patient carefully for other complicating diseases, especially tuberculosis and syphilis. I have recently treated a patient from down in your country who was so run-down and anemic that he did not respond to any form of treatment for weeks, but finally began to improve after persistent administration of iron and arsenic both by mouth and intravenously.

Where the patient does not respond satisfactorily, especially in chronic prostatitis, I would give some foreign protein subcutaneously to stir up his resistance. For this reaction I use typhoid vaccine, diphtheria antitoxin or some of the mixed sera or vaccines. It makes very little difference which you use as it is the foreign protein reaction that you desire. These injections repeated on alternate days will often stir up a healthy reaction with fever and an increased leucocytosis and the local condition will begin to improve immediately.

In arthritis of the knee an X-ray will probably show what the trouble is. The knee-joint is weight bearing, and the infection often erodes the cartilage and forms exostoses or roughened areas of bone in the joint. When the patient rests the joint, these areas stick together with excruciating pain to the patient when he attempts to move again. Neither medicine nor diathermy will help this condition as it is strictly operative."

The Treatment of Tumors of the Bladder

By HOWARD A. KELLY, M.D., F.A.C.S. and
WILLIAM NEILL, Jr., M.D., F.A.C.S.

From the Howard A. Kelly Hospital, Baltimore, Md.

The problem of tumors of the bladder, so long treated as the stepchild of urology, has in recent years taken on a new interest owing to the advent of several new factors. First of all, there is the more ready recourse to surgery of the viscus, exposing the tumor and attacking it effective in loco; then, there is the use of radium which has been found curative in an astonishing percentage of cases; and, finally, a new agent has come to claim a position in recent years, by which a current of electricity directed to a spot acts as a desiccating agent (endothermy) capable of penetrating the depths of the tumor and destroying it rapidly and without hemorrhage.

Surgery. Surgery is the most aggressive procedure and the only one associated with a serious risk. The limitations of surgery are at present, as in the past, due to the fact that with rare exceptions it is only applicable to isolated pedunculate growths, the simplest group under discussion, while it is worse than useless in any carcinoma invading the bladder wall. With the new agents now at our disposal, it is difficult to see just what field will remain for the pure surgeon except to employ his art as an adjuvant to the use of radium or endothermy,—that is to say, in exposing the field through a suprapubic opening in the bladder for the treatment. We, ourselves, have felt a serious temptation to spend considerable time in developing another form of surgery, however, that is to say, to labor to acquire skill in operating through the open cystoscopic, 14 cm. long and 10 mm. in diameter; especially in the female bladder does this method afford access to all parts, opening up a way for working with delicate instruments. In the male the instrument must be longer. It is quite certain, however, that any

attempt to remove a tumor by means of forceps, knife, or scissors is necessarily exposed to a risk of serious hemorrhage and should, therefore, be eliminated.

Electric Coagulation or Endothermy. We have for years used fulguration in attacking papillomata through our open air cystoscope with the patient in the knee-chest posture, but have always found that the chief difficulty was that we were able to make so little impression on a massive tumor at one sitting, even though we attacked the pedicle. Fulguration seems to yield its best results in sparking out superficial flat areas of disease where the papillary tumor is disseminated. In papillary carcinomata with infiltration, it is of course worse than useless. It is not our desire, however, to deprecate an agent which in a limited field has proven such an advance over previous ineffective methods.

More recently, an effective apparatus has been devised by Edward V. Clark of Philadelphia and extensively utilized by his former co-adjutor, Dr. George A. Wyeth of New York, who has brought this machine to a remarkable perfection. Wyeth, who is also a first class surgeon, as well as urologist, has made use of the desiccation and endothermic method to destroy tumors in the bladder by making a suprapubic opening and then penetrating and desiccating the disease in an area all around the base of the tumor which is then undermined, desiccated, and removed. The method is not applicable where there is basal infiltration but only to the papillary carcinomata not yet become invasive and to simple papillomata.

The writers believe that this method affords an extraordinary facility for dealing with these tumors without an incision, through the open cystoscope, in the male as well as in the female, and that in this way it will be possible to desiccate the bases of all pedunculate tumors and destroy them as a rule at a single sitting. Such a procedure simply calls for dexterity in the use of a cystoscope and in introducing a long well insulated needle to be brought into contact

with the base of the tumor or to be plunged into it. This will cut out the use of radium in all but the infiltrating, metastatic, or superficially widespread types, a welcome retrenchment in the radium field.

In recapitulation, the method which has the widest field of utility is the use of radium, and we have here an agent whose value is not yet fully appreciated in dealing with those otherwise hopeless cases. The endothermic method, however, greatly simplifies and extends and helps the radium application in removing masses of disease and curing the patient quickly in the simpler cases, and in limiting the field for radium to those in which the bladder wall is invaded.

Abs. from *Ur. and Cut. Review*.

Electro-Coagulation Essentials

By T. HOWARD PLANK, M.D.

Chicago

The first essential for good results from electro-coagulation is a good working knowledge of anatomy; the second and equal essential is a good grounding in pathology, for one must know how far he can go with the destruction, and electro-coagulation in destruction, and equally one must know how far it is necessary to go to obtain good results, and this can only be accomplished by having the necessary information at one's finger tips.

The limits of the pathology in the case at hand are the boundary lines that he must reach to obtain success. If the anatomy of the parts will not permit of this amount of destruction then the case is not one for electro-coagulation and some other method of treatment is to be followed.

The third essential is as perfect a knowledge of the destructive agent used as it is possible to obtain. In this instance it is the high frequency currents, either Oudin or D'Arsonval, either unipolar or bipolar, depending entirely upon what one wishes to accomplish.

The Waggoner Physiotherapeutic Lecture Courses

By Mel R. Waggoner, Cedar Rapids, Iowa

Classes for the Coming Season Follow:

Chicago, Illinois	- - - - -	October 27th to November 1st
	(The Auditorium Hotel)	
Charlotte, North Carolina	- - - - -	November 10th to 15th
	(Charlotte Hotel)	
New York, New York	- - - - -	November 17th to 22nd
	(Hotel Pennsylvania)	
Philadelphia, Pennsylvania	- - - - -	November 24th to 29th
Cleveland, Ohio	- - - - -	December 8th to 13th
	(Hotel Winton)	
Detroit, Michigan	- - - - -	December 15th to 20th
	(Wolverine Hotel)	
Chicago, Illinois	- - - - -	January 5th to 10th
	(Auditorium Hotel)	
Los Angeles, California	- - - - -	January 26th to 31st
	(Lecture Hall, Professional Bldg.)	
San Diego, California	- - - - -	February 2nd to 4th
	(Grant Hotel)	
San Francisco, California	- - - - -	February 9th to 14th
	(St. Francis Hotel)	
Seattle, Washington	- - - - -	February 16th to 21st
	(Olympic Hotel)	

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For Details, Fee, Etc., Etc., write the
Secretary of the Waggoner Lecture Courses, at
1664 N. Claremont Ave., Chicago, Illinois.

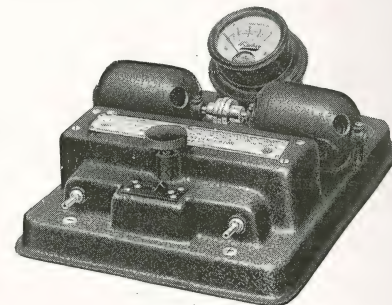
(Watch for announcements in Fischer's Magazine)

THE FISCHER GALVANIC CURRENT GENERATOR was designed and placed on the market only after repeated requests from operators of Fischer Diathermy and X-ray apparatus—requests for a machine that would generate a perfectly smooth flow of Direct Current at any desired voltage and milliamperage, with an accurate and finely calibrated meter, that would be simple to operate.

We are offering just such an outfit in our Model No. 1200.

The units are mounted on a one-piece metal frame, finished with a crystallized black enamel. The smaller attachments are of brass, heavily nickel plated, and stand out handsomely against the black background.

The generating device consists of a small noiseless motor driving a Direct Current generator. The voltage output ranges from zero to 150, and the milliamperage from zero to 25. A "Universal" type motor is employed which is equally effective on either alternating or direct current, at from 105 to 120 volts. The current obtained is direct from the generator—there is no ground connection.



Model No. 1200

Catalog No. 1200—The Fischer Galvanic Current Generator, with black crystallized finish, with connecting cord and plug, ready to operate from either Direct or Alternating current of from 105 to 120 Volts, with

- 1—No. 316 Spongio Disc and Handle
- 1—No. 1900 Hard Rubber Needle Holder
- 12—No. 1901 Sharp Steel Needles, and
- 2—No. 1904 Rubber Covered Connecting Cords

Catalog No. 1200 — complete — code GALVAN—
price.....\$100.00

A PAGE OF FUN



R.H.L.: I have asked every one I know what could possibly make a man write a poem like "The Deserted Village," and today a book agent enlightened me by saying, "Oliver Goldsmith was inspired to write The Deserted Village, while in Glasgow, Scotland, on a Tag Day."

One Sunday two lovers went to church. When the collection was being taken up the young man explored his pockets and finding nothing, whispered to his sweetheart: "I haven't a cent; I changed my pants."

Meanwhile the girl had been searching in her bag and finding nothing, she blushed a rosy red and said: "I am in the same predicament."

□ □ □

Tom: "Harry ate something that poisoned him."

Dick: "Croquette?"

Tom: "Not yet; but he's very ill."

□ □ □

"No," she said, "everything's over between us. We're through. Shall I return your letters?"

"Yes, please," replied the rejected one. "There's a lot of good stuff in them I can use again."

Strolling along the quays of New York Harbor an Irishman came across the wooden barricade placed around the enclosure where emigrants suspected of suffering from contagious diseases are isolated.

"Phwat's this boarding for?" he inquired of a bystander.

"Oh," was the reply, "that's to keep out fever and things like that, you know."

"Indade!" said Pat. "Oi've often heard of the Board of Health, but bejabbers, it's the first time Oi've seen it!"

□ □ □

What a wonderful bird the frog are,

When he stand, he sit,

When he hop he fly,

ALMOST.

He ain't got no sense,

HARDLY.

He ain't got no tail

Either.

When he sit down he sit on

What he ain't got

ALMOST.

**THERE ARE BOATS THAT MIND THE HELM
AND BOATS THAT DON'T.
THOSE THAT DON'T, GET HOLES KNOCKED
IN THEM SOONER OR LATER.**

—Elbert Hubbard.

Program for Our
**Monthly Physiotherapeutic
Meeting**

Monday, December 8th, 1924

W. B. CHAPMAN, M. D., Carthage, Missouri.

"The Application of Physical Agents in the
Treatment of Pulmonary Tuberculosis" - 10:00 to 11:00 A.M.

T. A. KREUSER, M. D., Chicago, Illinois.

"Galvanism" - - - - - 11:00 to 12:00 Noon

C. L. BARBER, M. D., Lansing, Michigan.

"Applied Medical Diathermy" - - - 1:30 to 2:30 P.M.

W. B. CHAPMAN, M. D.,

will speak informally
on "Physiotherapy in General Practice" - 2:30 to 4:30 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 West-
ern Avenue Station, walk one
block north to Wabansia Ave-
nue and a short block east
to Claremont, or

BY SURFACE CAR—Western
Avenue to Wabansia Avenue,
and one block east to Clare-
mont.

**We have ample space
for all of you. Remem-
ber the date and come to
our Lecture and Demon-
strating Rooms at**

**2335 WABANSIA AVE.
CHICAGO**

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FISCHER'S MAGAZINE



THIS BOOK

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362

NOVEMBER, 1924

SHUN IDLENESS.

IT IS THE RUST THAT
ATTACHES ITSELF TO
THE MOST BRILLIANT
METALS.

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. 11

NOVEMBER, 1924

No. 12

The Convention

NOW that it is all over, we are able to see in perspective the tremendous significance of the Third Annual Physiotherapeutic Convention held at Logan Square Temple during the week of October 20-24. Frankly, during the Convention everyone in the Fischer organization was too busy to devote much time to analysis of the events of those five days!

Aside from the magnitude of the gathering—nearly seven hundred registered M.D.'s were present—perhaps the most impressive feature was the territory covered. Not only was every part of the Union represented, from California to Maine and from Washington to Florida, but there were present physicians from Canada and the West Indies as well. What stronger evidence could there be of the nation-wide establishment of Physiotherapy?

"It has been the most constructive convention that I ever attended," said a doctor from New York. We felt that, too. All through the week there was evident an earnestness and enthusiasm that made the excellent lectures and clinics doubly interesting and valuable to every participant.

There was an undercurrent of supreme confidence evident in both lectures and clinics; confidence based on experience and success, and indicative of the strides that have been taken in Physiotherapy during recent years. Truly, scientific medicine is forging steadily ahead.

Many of the visiting doctors expressed especial appreciation of the arrangements that had been made for their comfort and convenience; accommodations, amusements, stenographic facilities and the like. We were very glad, indeed, to do our best in this respect, for we appreciate that it is to the best interests of all concerned that every visitor be free to devote his attention and energy wholly to the convention itself.

It was a great Physiotherapeutic Convention. The finest of its kind that has been held. When we predict that next year's gathering will be even bigger and better, we are setting a high standard, indeed. To those physicians who are interested in Physiotherapy we can say in full confidence that this Convention was well worth attending and that the next one will be even more so.

This Convention—And the Next

It is not only with extreme pleasure, but with pride, that we announce the *success* of the greatest gathering of physiotheraputists of all time. The fondest hopes of past years are fast becoming a reality.

A friendly feeling prevailed throughout the big meeting, and we feel safe in stating that every physician in attendance derived even more benefit from the lectures and clinics than he had hoped for. Criticisms were offered, but in every instance they were constructive, and, as in previous years, such criticisms will be of tremendous assistance in planning future clinics.

Our effort next year, however, will be to outclass this meeting in every way. So if, during the course of your stay, you found occasion for constructive criticism, you will help build up these big meetings to a point where they will be of greater benefit and convenience to physicians attending, if you will point out such conditions by corresponding with Mr. H. T. Fischer, Editor of FISCHER'S MAGAZINE, while the affair is still fresh in your mind. We shall tabulate every such constructive suggestion, and make every effort next fall to apply them.

Several eye, ear, nose, and throat specialists suggested a plan of submitting their subjects during one or two successive days, instead of spreading them over the entire week. Many were of the opinion that more clinics, more round-table talks, and more clinical material, would be beneficial and would add to the already excellent program.

The vacancies in the big program, caused by a few physicians who, we regret, were unable to attend or who were called away, were quickly filled by able men, and the big convention hall fairly buzzed with eagerness during the entire five days.

The whole-hearted appreciation expressed by the boys when leaving for home will be an incentive to make the 1925 program greater in every way. I want to take this occasion to thank the physicians in attendance for making the meeting the greatest success ever achieved in physiotherapy, and to express the hope that the next few years may raise the plane on which physiotherapy rests to a point where it will of necessity become the most valued adjunct in *every* physician's office.

To this height we have set our goal.

H. G. FISCHER.

Valedictory to the Convention

By EDWIN C. HENRY, M. D.

Lord Lister Hospital, Omaha—Chairman of the Convention

Gentlemen, the time has come to say goodbye. Since Monday morning, we have been the guests of H. G. Fischer & Co., who have extended us every possible courtesy in this pleasant hall.

You may be interested to know just who *we* are. We come from thirty states of the Union, Mexico, Canada, and the West Indies. We number between six and seven hundred representative physicians of regular medicine.

Here is the criterion as to whether this meeting has been a success or no. Are you going away holding your head a little higher, your spine a little straighter, because you belong to the healing profession? Are you going back determined to re-read your Anatomy and Physiology? Have you made up your

mind to look the world squarely in the face and use every means known to Science and Art to help your patient? Have you resolved to dedicate your life to give the sick the best that is in you in service? Then this meeting has been a success.

In summing up such a Convention, only the high points can be touched. Only the things that were of prime importance can be noticed. Almost every speaker has stressed the vital importance of viewing the body as a whole. For example, when a patient has a tubercular gland of the neck, he is a tubercular patient, and instead of focusing our attention on that one gland, we must realize the whole body must be treated. Remember this one from Pope,—“Every patient that comes to you may be soil in which is planted Tuberculosis, Syphilis or Malignant Disease.”

It will take a good while to digest the physics of the Actinic Ray as so ably outlined by Donnelly. If we are going to master this new science, we must go back to the old masters just as he has done and study Newton, Tyndal and Helmholtz.

Remember this pungent truth from Donnelly, “All the energy that comes to us making life possible, comes from the Sun.” One octave is called visible light. Above that, consisting of three octaves, are rays called Actinic. Actinic rays are just as real, just as demonstrable as visible light. Pettit gave us some wonderful pictures showing how light and Actinic rays cured tuberculosis. He gave Rollier credit for his pioneer work in bone tuberculosis.

Surgical Diathermy was demonstrated as a real aid in treating malignant disease. Dr. Kolischer testified he had given up the knife in cancer of the cervix. Surgical Diathermy, Radium, Deep X-ray, skilfully used, will save an enormous amount of suffering, and there is evidence of many lives being saved. In all of his talks, Dr. Kolischer showed the trained mind of the surgeon with a broad grasp of the field of malignant disease and the action of radiant energy on the cancer cell.

Radiant energy is now an established part of the doctor's armamentarium. Visible Light, Actinic Rays, X-ray and Radium are but different parts of a mighty spectrum coming to us from the Sun.

The Convention owes a debt of gratitude to the physicians who gave their time and their knowledge in clinics and lectures—these are the men:*

Miles J. Breuer, M. D.	Gustav Kolischer, M. D.
W. B. Chapman, M. D.	Ellis G. Linn, M. D.
Maurice R. Cottle, M. D.	Frederick H. Morse, M. D.
Leo C. Donnelly, M. D.	Roswell T. Pettit, M. D.
Chas. H. Frederickson, M. D.	Curran Pope, M. D.
Dean W. Harman, M. D.	A. L. Smith, M. D.
Abraham R. Hollender, M. D.	Harry M. Thometz, M. D.
Wm. E. Howell, M. D.	Albert F. Tyler, M. D.
D. Frank Knotts, M. D.	Mel R. Waggoner, M. D.
Disraeli W. Kobak, M. D.	

That the splendid work of H. G. Fischer & Company in arranging this Convention and carrying it through, is thoroughly appreciated, has been demonstrated by the unanimous rising vote of thanks we have tendered to them.

EDWIN C. HENRY, M. D.

*To these we must add the name of Doctor Henry himself! His invaluable work as chairman contributed much to the success of the Convention. H.T.F.



Thermopenetration in Treatment of Disease of the Female Bladder

Buben, in *Deutsche Medizinische Wochenschrift*, reports fifty patients treated, some for gonorrheal conditions, others for cystitis, incontinence, or painful urination. In twenty the applications were intravesical; in the remainder extravesical only. In the latter an olive-shaped electrode was used in the vagina with Kelen's thermometer, the external electrode being a lead plate the size of a man's palm over the symphysis. The improvement in these was less satisfactory than by the internal method, although usually good results were obtained in this way also.

The internal electrode employed in the cases treated intravesically consisted of a metal catheter twenty centimetres long and narrowed in the middle, fitted with a cock and with a two centimetre screw tip. From the cock to the removable tip the narrower central portion is insulated with rubber-coated silk webbing. Through the metal tube the bladder may be filled with salt solution, the cock may then be closed, and the same tube serve as an electrode. The fluid is thus gradually and uniformly heated by the passage of the current, and the entire mucosa of the organ in this way receives an intensive warming. Three applications a week were given of ten to twenty minutes' duration with one-half to one ampere of current. On an average ten applications accomplished a cure. The most marked success was that obtained in juvenile enuresis.

There is no doubt in the author's mind that the heat effect of thermopenetration differs materially from that of heat applied externally. The explanation of this difference is not to be sought in the action of the electric current in thermopenetration, but in observation that, while external warmth affects only the surface tissues to a depth at most of one or two millimetres, the deeper tissues may be heated by thermopenetration to any desired temperature below the coagulation level of 50 degrees C. This heat generated in the deep tissues

is manifested not only in a hyperemic effect on the nerve endings of the arterial walls, but also by affecting other trophic nerve endings, and so, by raising the temperature of the interior of the body, a tonic effect is produced on the chemical constitution and metabolism of the region penetrated by the current.

Quartz Light Therapy in Diseases of the Ear

By LEO C. DONNELLY, M. D.
Detroit, Michigan

Ear specialists quite generally admit that Ultra Violet Rays, as well as the X-ray and frequently Electro-Therapy, are important adjuvants in the diagnosis, prognosis and consequent treatment of diseases of the ear.

The author, as an Ultra Violet Ray specialist, frequently has had cases coming in this category referred to him for treatment.

Included therein have been cases where partial deafness appeared as a symptom. Suppurating middle ear with poor prognosis, as well as operated patients, have all been seen and treated.

Let us summarize typical happenings: A patient is suspected of developing a mastoid abscess. Operative procedure, while anticipated, is not immediately resorted to. It is, therefore, entirely feasible to use our method to build up resistance and alleviate pain, both of which are certain to accrue if the Alpine Sun and Kromayer lamps are properly made use of at this time. Infection may be checked so that the necessity for operation is overcome.

Every ear surgeon knows of many cases where the mastoid process had been operated, leaving a sluggish non-healing wound. The patient is run down, worn out perhaps by long continued sepsis, and pain—in fact, altogether discouraged with daily routine of dressings which seem never to end. At this point comes a suggestion from some source that Quartz Lamps be employed. The picture now undergoes a complete change.

Very shortly sleep is more natural, toxicity decreases, appetite increases, and these results bring renewed hope to patient and friends alike.

Here, our technique is arranged so as to conduct the Ultra Violet Rays to all parts of the wound, and the necessity for first or second degree reactions is determined, and a course of general treatments prescribed dependent upon general bodily vitality indexes. Evidences of the benefit derived are indicated by a more watery discharge, generally becoming more profuse after a few treatments, while the appearance of the wound changes from its grey, sluggish, septic state to one of a more healthy nature and the prognosis is then materially altered.

A mastoid abscess is osteomyelitis of the mastoid cells. The entire body is damaged by the absorption of septic materials from the necrotic bone. Calcium metabolism is especially lowered. Increased calcium metabolism aids in curing osteomyelitis by producing new bone to wall off and, later, replace the diseased bone. The fact that quartz light therapy cures rickets, tetany, spasmophilia and is the best adjuvant in the treatment of tubercular and other forms of osteomyelitis is now well known by physicians who read the modern medical literature. These beneficial results are partially brought about by the quartz light stimulation of calcium and phosphorus metabolism. This stimulation is further increased by spraying the patient with a three per cent solution of calcium chloride during the treatment.

The type of applicators used, postures assumed for the proper manipulation of same, at times supplemented by some irrigating system to be employed, are all necessarily determined by individual factors and environment present or lacking, in each case.

It is important to note that probably all cases of this type are benefited, some being cured, and manifestly a medium capable of approximating these results in the hands of any intelligent physician is sufficiently valuable to be made universally serviceable.

Tonsil Fulguration Better Than Tonsil Operation

By THOMAS M. STEWART, M. D.

The writer claims success in ninety per cent of cases treated by fulguration which is equal to the degree of success claimed for the cutting operation. This method together with one or two X-ray treatments using a 7 to 9 inch spark gap leaves nothing to be desired. Most tonsil operators are unaware of the wide range of unsatisfactory results after the cutting operations and a review of the literature reveals a large number of fatalities following such operations.

Davis (Journal A. M. A., April 22, 1922) in the examination of 7500 school children during a period of two years, says: "I was impressed with the large number of children showing pronounced enlargement of the glands of the neck and poor nose breathing, although their adenoids and tonsils had been removed." His conclusions are:

1. The incidence of heart disease in children referred for tonsil operation is very small.
2. The glands of the neck enlarge as often after as before removal.
3. There is more complete relief from symptoms when removal is done at from 7 to 10 years of age.
4. Early removal gives mechanical relief for a short time, but the original cause of the growths, whatever it may be, is present and active until a much later period.

Abstracting from a large number of articles by prominent men the author concludes that the end results in tonsil operations do not guarantee a disappearance of the symptoms and infections traceable to the tonsils. Neither do tonsil operations prevent the recurrence of the symptoms and infections. It is logical therefore to use other methods to reduce large tonsils in size and render them more healthful. Tonsil fulguration and its modifications meets the requirements, and does not carry with it the attendant dangers of the cutting operations.

The advantages of high frequency currents by means of fulguration, electro-coagulation, dessication and diathermy, are:

1. Bloodless work. The danger of hemorrhage is abolished.
2. The danger of infection due to local anesthesia and of death due to the general anesthetic is also abolished.
3. The diseased parts undergo sterilization because the current used is germicidal.
4. The singing and speaking voices are in no way impaired.

Technic

The first step is the application of the local anesthetic to the tonsil along the borders of the pillars and on the upper pole. For this purpose a one per cent cocaine solution may be used. This is painted on by cotton swabs. Solutions of procaine or novocaine may also be used. Adhesions must be separated and tonsillar crypts flushed out. In applying the high frequency technic, it is best to consider three types of tonsils:

1. The hard tonsil.
2. The disintegrating tonsil.
3. The soft inflamed tonsil.

The Hard Tonsil Technic

This tonsil because of poor circulation and low grade tissue changes responds to heat. The D'Arsonval high frequency current is of lower voltage than the Tesla, consequently it has greater amperage. The greater quantity of current is needed in diathermy and electrocoagulation. The pole or terminal of the D'Arsonval coil is attached to a probe, cotton wrapped, soaked in epsom salt solution, and the probe is fastened into a Cook fulguration handle. The other terminal is attached to the auto-condensation chair or the ordinary auto-condensation handle which the patient then holds. The cotton wound probe is pressed against the tonsil and the current gradually turned on until it is hot and then it is moved over the surface of the tonsil, into the crypts and space around the tonsil. All manipulations are gently done. The application to each tonsil consumes

three to five minutes of time. The after-soreness is slight and disappears in a day, at most two days, and then another treatment is in order. It is better to perform the operation four or five times than to over-treat at one sitting.

The Disintegrating Tonsil Technic

Use D'Arsonval current 500 to 800 milliamperes, controlled by foot switch. Here good local anesthesia is usually needed. Mould a piece of block tin or metal mesh cloth, six inches square will do, to shoulder and back. Hold it in place with sand bag or bandage so that perfect contact is obtained. One terminal is connected to this as the indifferent electrode. The other terminal is connected to Cook's handle which carries a long needle. Insert needle into tonsil one-eighth to one-quarter of an inch. Turn current on for an instant, the part will turn white if coagulation is perfect, if not, repeat. Treat several areas, the whole tonsil can be treated at one sitting if desired, after one has had the experience by which to judge results and estimate reactions. It is best to do a little at first sitting and give two or three treatments rather than to do too much at one time. Two week intervals may be required between treatments. With this method, some after-pain may ensue. Cold epsom salt compresses will help nicely. One-half teaspoonful of epsom salt to cup of water. Use part as gargle.

The Soft Tonsil Technic

Less heat is needed for treatment of this type of tonsil, because the vessels are already dilated. The D'Arsonval current would only dilate them to a greater degree. Less current and more voltage is needed and this is the character of the current obtained from the Tesla winding or Oudin resonator. The application of this current is highly germicidal and will contract the tonsil down to normal size. The auto-condensation chair is connected to one Tesla terminal. The wooden or glass tongue depressor of the author's design is used, as metal ones are contra-indicated. Then with a probe insulated in its middle portion, draw the current out of tonsil at different points until it is slightly blanched. The current is felt in the

operator's fingers, he being the partial ground. The fingers not holding the tongue depressor, touch the patient's face, and by using one or more fingers, the current may be controlled. The after-soreness will disappear in three or four days.

The Unipolar Current for Relapses

If a tonsil needs a little more treatment at a later date after dismissal, the Oudin or unipolar current is a simple technic and effective. After two or three swabs of the local anesthetic, use insulated electrode with about one-eighth inch spark. Each spot treated will turn white. Go around the outer edge of the tonsil.

Conclusion

By using one or more of the electro-therapeutic methods described above it is possible to treat diseased tonsils with an equal or greater degree of success than by the cutting operations, and without the dangers or bad after-effects of the latter.

(*The American Physician*, Vol. XXIX, August '24)

Treatment of Neuralgia with the High Frequency Current

Schurig, in *Deutsche Medizinische Wochenschrift*, says that while it should be a matter of routine practice in every case of neuralgia to ascertain and treat the cause still many of the severest forms are necessarily classed as "idiopathic," in which no other origin than "taking cold" can be assigned, and these are apt to prove particularly stubborn. In all these forms the author finds high frequency a sovereign remedy, greatly superior to any other. Foremost among them he places certain cases of supraorbital neuralgia of long duration and resistant to numerous efforts at relief. Occipital neuralgia is not infrequently an associated feature. Most obstinate of all are brachial and intercostal neuralgia, but even these yield to persistent treatment.

Excellent results are obtained in sciatica, both acute and chronic. In cases so acute that the pain is well nigh unbearable,

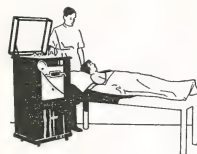
after a few sittings the patient feels better, becomes able to walk with a cane and later without one, and in twenty or thirty treatments a complete cure is effected. To accomplish this the current must be as strong as can be borne, the length of a sitting half an hour, and the treatments preferably daily. In the chronic form the same measures produce an improvement in five or six sittings, and twenty or thirty, occasionally more, afford complete relief from pain that has tormented the patient for years and decades.

In exceptional cases high frequency applications prove ineffective. Then the author resorts to the galvanic current, after the method suggested by Stanowski of Danzig in 1898, very strong and as long as can be borne, up to half an hour. Especially in sciatica has the author obtained in this way most gratifying results.

Diathermy and Angina Pectoris

By S. EDGAR BOND, B. A., M. D.

Richmond, Indiana



(Doctor Bond discusses the pathology of Angina Pectoris at some length, together with symptoms and methods of relief. He continues:)

Nitro-glycerine is the remedy par-excellence for the internist. An uncertain and dangerous operation, as yet in its incipency, is the relief offered by the surgeon. The patient faces the alternative of a quiet life or one more attack and possible death.

Some recent experiences from other operators in this clinical field in the use of physical therapy have given me reason to hope for relief for some cases of angina pectoris. A case treated during the last year may well illustrate some possibilities in the use of diathermy or internal electrical heat as one of the future possible methods of relief or cure of this

and similar diseases. I have secured relief. Time alone will prove its permanence.

Case Report

Mrs. A., age 58, plump, complaining of attacks of pain in the chest with continual pain over cardiac area, especially noticeable in the superior cardiac aortic region near sternum. She gave a history of several attacks varying in severity from slight spasm of pain to *in extremis*. These had been relieved by an extended stay in the open plains and among the foothills of the northwest. On returning home she was again seized with attacks as formerly. She suffered great dyspnea with little relief of pain after her first attack. Physical examination and history of the case indicated a typical case of angina pectoris.

I at once suggested she place herself under my care and the use of diathermy. She began treatment October 21, 1923. She took in all twenty treatments. A small metal pad large enough to cover the cardio-aortic area was placed over the heart, and a larger electrode was placed opposite this on the posterior surface of the body. The first fifteen treatments were taken regularly every other day, and later treatments irregularly because the patient did not feel the need of them. Relief was noticeable from the first treatment. The last treatment was given February 19, 1924. For some time prior to that she was practically free from pain. She has suffered no attacks since, and considers herself cured. She is at present at work on her farm, but she has been cautioned against undue exertion. She, however, continues to perform light farm duties.

In this case I purposely withheld all treatment in the nature of drugs in order that I might test out the efficiency of diathermy. The above experience is not sufficient to herald a cure, even in this specific case, but the returns to both physician and patient have been of such a nature we feel as the time passes along that we can record for physiotherapy another triumph in the field of incurable disease.

(Journal of the American Association for Medico-Physical Research, July 15, 1924.)

Now—We Train Nurses in Practical Physiotherapy

New Reciprocal-Registry Plan Provides Skilled Assistants for Physicians

In response to a very general demand for skilled assistants, we have arranged to give a complete intensive training course in Physiotherapy to nurses and office girls.

This course will require three weeks' constant attendance at classes which will be held in our own building. A trained nurse, familiar with Physiotherapeutic apparatus and experienced in teaching, will have charge of the work. Doctors may arrange to have their nurses or office girls attend; trained nurses will find it an invaluable post-graduate course, which will give them, in three weeks, the knowledge necessary to act as skilled assistants in the use of Physiotherapeutic apparatus.

A *reciprocal-registry* system has been inaugurated, by means of which doctors may enter their applications for Fischer-trained nurses, and nurses may register for positions where such training is required. A nominal charge will be made for the course, which will cover both training and laboratory fee.

Classes for the first course will cover the period from November 24th to December 13th, inclusive. Doctors and nurses are urged to register promptly, as there is every indication that reservations covering each course will be very quickly exhausted.

Full information on request.

Doctors—Nurses—Investigate this Course!

H. G. FISCHER & COMPANY, INC.

2335 Wabansia Avenue Chicago

SPECIAL CLINICAL COURSE IN X-RAY and PHYSIO-THERAPY

Monday December 1st, 1924—Omaha, Neb.

The fourth of a series of ten clinical courses sponsored by the Magnuson X-ray Co. for the purpose of further educating their customers in the uses of these modern therapeutic agents. These meetings are conducted by physicians of the highest standing who have had many years' experience in this work and they deal with the practical side of the question.

PROGRAM

9:00 to 12:00 a. m.—Practical Clinic at Lord Lister Hospital.

2:00 to 5:00 p. m.—Lectures and discussions by:

B. H. Sherman, M. D., Dexter, Ia., Chairman.

Curran Pope, M. D., Louisville, Ky.

G. W. Kauffman, D.D.S., Des Moines, Ia.

Sanford Withers, M. D., Denver, Colo.

T. B. Lacey, M. D., Glenwood, Ia.

6:00 p. m.—Banquet at University Club.

The Louis Gregory Cole G-I films will be shown after the banquet.

You are invited to bring any interesting clinical cases to Lord Lister Hospital—any of them operated during the clinic will be hospitalized without charge.

NO FEE IS CHARGED FOR THIS COURSE

Diathermy Soap Lather Paste



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Physiotherapy Treatment of Bone and Joint Injuries

R. W. FOUTS, M. D.

Omaha Clinic, Omaha, Neb.

The treatment of any bone or joint injury will depend in a great measure upon the length of time that has elapsed between the receipt of the injury and instituting treatment. . . .

In a case of injury in the region of the joint, for example, the ankle, which is a so-called bruise or sprain, what particular thing is responsible for the disability?

The pain, of course; but why so much excruciating pain when we may have only a slight tearing or laceration of the soft parts in this region? We are all aware that if we get but little swelling, only a moderate or trifling amount of pain will be experienced, and our conclusion is that the injury was only slight because there was but little swelling and pain. The seriousness of the original injury is usually gauged by the amount of pain and swelling. This, however, is fallacious. . . .

The difference is in the amount of fluid poured out in the tissues in nature's effort to combat or limit the extension of the irritation. If nature is generous or over-enthusiastic, as is sometimes the case, and an excess of serum is poured out, resulting in an extensive edema, a proportionate swelling occurs with its consequent pain and disability. The edema of itself produces additional injury by laceration of the muscle sheaths and traumatizing the soft tissues. . . .

From the foregoing it is evident that treatment should be instituted as soon as possible following the injury, before the usual edema and swelling occur. However, these conditions are no barrier to or contraindication for treatment, but all agree that "an ounce of prevention is worth a pound of cure," and that it would be better to prevent the edema, swelling and pain, rather than wait till these symptoms are present and then attempt to relieve them.

Given a case of severe sprain of the ankle, with immediate extensive swelling and consequent pain, how shall we proceed?

First, a thorough examination which can be made only with the X-ray. A fluoroscopic examination will not suffice. Pictures must be taken in both planes, or better still, if taken stereoscopically.

Fractures will be detected many times with this kind of examination that would otherwise be overlooked.

The presence of a small fracture makes no difference so far as treatment is concerned, but it is a mighty good thing for the physician to know, particularly, if for any reason the case should pass out of his hands and the patient later be appraised of the fact that he had a broken leg.

Our effort in the treatment of a case of this kind is toward the relief of pain, and we do this by relieving or preventing the one thing that is causing the pain—the edema. This is accomplished by the use of diathermy after the following technic:

If the pain is not so great that the foot cannot hang down, it is placed in a basin of salt water and a combination of the cuff and salt water electrode method is employed; the cuff being placed well above the ankle on the calf of the leg, care being taken that the cuff is only tight enough to insure contact and it must be loosened and reapplied from time to time during the course of treatment, which should last thirty minutes to an hour. If the cuff is not loosened it will become a constriction and an impediment to the return circulation within a few minutes after the treatment is begun. The electrodes may be applied laterally if, so desired, but the combination method, if it can be employed, seems better. The greatest amount of heat is produced at the point where it is most needed, and the efferent vessels higher up the leg are dilated, favoring the return flow of the lymph.

Another factor which contributes to the pain in a great measure is the spasm of the muscles. The sedative action of diathermy relieves this by relaxing the muscle spasm. The efferent lymph channels are opened and edema and swelling are prevented if treatment is instituted early, or is quite promptly disposed of if present. During the treatment and for a

few minutes following, gentle massage from below upward will materially assist in the process.

After treatment, the limb is covered with a thin layer of cotton, an extra layer being placed below the malleoli, and an elastic bandage applied from the toes to the calf of the leg. The limb is kept elevated and in six hours the treatment is repeated.

With the edema and swelling eliminated, the pain is reduced to a minimum and is of small consequence.

With the edema and swelling held in check for 36 or 48 hours the ankle may be strapped with adhesive tape after the usual fashion and the patient walks with but little pain or inconvenience. . . .

What has been said about treatment of sprains, applies equally well in the treatment of fractures, providing the fracture is of such a nature as to admit of this form of treatment. . . .

For illustration, let us take a fracture of the forearm. After the fragments have been properly reduced, our efforts should be directed toward preventing edema and swelling.

If the injury is such that it may be treated in this manner, diathermy may be given by the application of metal splints applied directly to the forearm extending well up to the elbow. After a thirty to forty-five minute treatment, the muscle spasm is relieved, the efferent channels are opened and edema and swelling reduced to a minimum. With these conditions relieved the pain is of small consequence. The part is kept continually elevated during the treatment and for 36 to 48 hours following. Treatment may be repeated three or four times during this period, after which a plaster cast or whatever form of splint desired may be applied and the patient become ambulatory.

This treatment has to its credit, not only lessened pain during the first few days, but the distinct advantage of eliminating the additional trauma produced by the edema and the resulting fibrosis of the soft tissues after healing has taken place.

We have many times been impressed by the conditions often encountered upon removing a cast or splints after four to six

weeks: The flabby atrophied muscles in some cases, while in others the partial loss of function, due to fibrosis of the muscles, and the difficulty encountered in restoring this function. . . .

This condition may be overcome or prevented if proper treatment is instituted. The muscular contractions elicited by the early electrical stimulation enable the muscles and tendons to free themselves from the intra- and peri-muscular adhesions that are in the process of formation, thereby preventing the usual disability frequently present in these cases. The auto-muscular or cellular massage has a favorable influence upon the edema by dispersing the effused lymph.

This procedure may be carried out by utilizing the faradic current with a mechanical surge, so controlled that we may begin the treatment with very light stimulation and contractions increasing in strength as the case progresses.

Treatment may begin three or four days following the injury and be carried on without disturbing the splints by making application over the motor points higher up the limb. If bipolar contact is desired, this may be done by means of a water soaked electrode applied to the hand; in this way fibrosis and muscular atrophy are eliminated.

In the cases seen several weeks or months after the injury where firm fibrosis or ankylosis has taken place, the foregoing measures are supplemented with X-ray and manual manipulation. These are the cases that demand an unlimited amount of patience and perseverance. Here massage and manipulation play a great part and the results obtained will depend upon the judicious administration of these measures.

A preliminary treatment of diathermy materially assists by inducing a relaxation of the parts. We believe the X-ray to be the best solvent known for fibrosed tissues. Its action upon scar tissue is too well known to necessitate further discussion. It is employed in small doses, one-third of an erythema dose, once a week.

In addition to massage and manipulation, the faradic surge is employed, as it affords a very convenient and efficient mechanical means of exercise and is of distinct value.

Summary

1. Diathermy is of value in bone and joint injuries and should be used early. It relieves muscle spasm, prevents edema and lessens pain.

2. By controlling edema and swelling, further traumatizing of tissue and the resulting fibrosis is prevented.

3. Fibrosis of soft tissues may be prevented by early employment of electrical stimulation. If continued and increased in strength will prevent atrophy of the muscles.

4. In cases of long standing with fibrosis and ankylosis diathermy is of value, preliminary to massage and manipulation.

5. Small doses of X-ray assist in the absorption of scar tissue.

6. Massage and manipulation consistently employed is of greatest value in cases of old standing.

The value of physiotherapeutic measures is not understood or appreciated by the vast majority of physicians, and for this reason is not regarded with favor.

However, it has distinct value and is entitled to a place in medicine. Positive proof obtained by these measures merits a conscientious consideration from every physician interested in doing better work.

(Read before the Western Electrotherapeutic Association
Kansas City, April 17, 1924)

THANKSGIVING

For peace and plenty; for national prosperity beyond the dreams of less favored countries; for the kindness of our fellowman; for the rich heritage of knowledge and skill that is available today in the alleviation of human suffering; for the wonders of this age which are at our beck and call on land and sea and in the air; for countless advantages which were unknown to the founders of this Feast, let us be thankful.

The Waggoner Physiotherapeutic Lecture Courses and Clinics

By Mel R. Waggoner, M. D., Cedar Rapids, Iowa

Classes for the Coming Season Follow:

Charlotte, North Carolina	- - - -	November 10th to 15th
	(Charlotte Hotel)	
New York, New York	- - - -	November 17th to 22nd
	(Hotel Pennsylvania)	
Philadelphia, Pennsylvania	- - - -	November 24th to 29th
	(Sylvania Hotel)	
Montreal, Quebec	- - - -	December 8th to 13th
	(Mount Royal Hotel)	
*Detroit, Michigan	- - - -	December 15th to 20th
	(Wolverine Hotel)	
Chicago, Illinois	- - - -	January 5th to 10th
	(Auditorium Hotel)	
Los Angeles, California	- - - -	January 26th to 31st
	(Lecture Hall, Professional Building)	
San Diego, California	- - - -	February 2nd to 4th
	(Grant Hotel)	
San Francisco, California	- - - -	February 9th to 14th
	(St. Francis Hotel)	
Seattle, Washington	- - - -	February 16th to 21st
	(Olympic Hotel)	

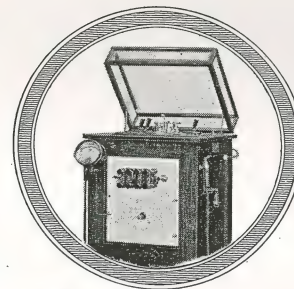
*Those who planned to attend the Cleveland class (which has been canceled) are advised to attend the Detroit class instead.

Personally conducted Courses, Clinics, Lectures

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A PAGE OF FUN

Jack: "Mrs. Reilly wants to know how long babies should be nursed."

Cass: "Tell her the same as short ones."

□ □ □

At a golf club one Sunday morning a member turned up late. Asked why, he said it was really a toss-up whether he should come there that morning or go to church.

"And I had to toss up fifteen times," he added.

□ □ □

She: "Since I inherited that property I've had three proposals."

He: "Oh, for the land's sake!"

□ □ □

"What precautions do you take against microbes?"

"First, I boil the water—"

"Yes, and then?"

"Then I sterilize it—"

"That's right, and then?"

"I drink nothing but beer."

He (after a long argument): "So you see, dear, you misjudged in saying that I was making love to that other girl just because we were out on the porch."

She: "All right. I believe you. Now wipe that eyebrow off your cheek and we'll go home."

□ □ □

The way to kill some people is to ignore them; the way to ignore others is to kill them.

□ □ □

Poor Fish (after breathless minutes): "Dearest, am I the first man that ever held you in his arms?"

Fair Fisher: "Yes, of course! Why do you men always ask that the first thing?"

□ □ □

Modern Girl (telephoning home at 3 a. m.): "Don't worry about me, Mother. I'm all right. I'm in jail."



THE ABSENT MINDED WAITER

COURTESY
JUDGE

FOR THEY CAN CONQUER
WHO BELIEVE THEY CAN

FISCHER'S MAGAZINE



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363

DECEMBER, 1924

SHOW ME A MAN WHO
MAKES NO MISTAKES AND
I WILL SHOW YOU A MAN
WHO DOESN'T DO THINGS.
— THEODORE ROOSEVELT

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. III

DECEMBER, 1924

No. 1

Christmas

Let us take a little trip down Memory's Lane.

At the end of the lane, we are back in an old fashioned home. It is Christmas Eve, and all outdoors is covered with a soft, white mask of new fallen snow. We have been put to bed early, for we are only a few years old, and little folks must be out of the way when Santa comes. Under the warm blankets we shiver with excitement as we listen for the muffled patter of reindeer hoofs and the silvery jingle of sleighbells.

Presently, however, in the midst of our vigil, the Sandman has his way with us and we fall asleep. We are startled into a glad wakefulness by mother's voice—or father's—"Santa Claus has been here; come and see what he left for you!" We come, round eyed with expectancy.

What a vision! A corner of fairyland, transplanted into the familiar room. Candles gleam softly against the dusky green of a tall Christmas tree, their light reflected in twinkling splendor by brilliant, colored ornaments and glittering tinsel. On the boughs and all about the tree are things straight from Santa's workshops. With a thrill of purest joy, we set about inspecting these.

Never, in after life, may we experience an hour just like that one. The nearest approach to it, perhaps, lies in the reflected joy that is ours as we stand in the background at

Christmas time while today's generation of little folks takes the place that once was ours.

May that joy, and all the pleasant merriment of Holiday Time, be yours in full measure, this coming Christmas tide.

Electrotherapy in Chronic Prostatitis

An Open Letter From

L. B. WILLIAMS, M. D., TORONTO

"Gentlemen: In Fischer's Magazine, October Number, Page 16, 'Prostatitis,' both the enquiring and the responding doctor seem to be chafing under defeat. The former used Diathermy and 'failed to get results.' The other doctor in answering his confrere says 'where the patient does not respond satisfactorily.' Impaired prostate (chronic) is today, and unnecessarily so, one of the most serious conditions of man's maturer years. Electrotherapy and surgery in their respective schools of thought in medicine are the rostrum of therapy. The writer, who has experienced much of both, has no hesitancy in saying that in the earlier days of symptoms, Electrotherapy will remedy the patient to his satisfaction, with no thought of surgery. In the long neglected cases it will help much to make life less of a burden, whereas with surgery life is too far spent to give any assurance; it isn't a fifty-fifty chance of either living or betterment.

"In the light of what may be accomplished today with Electrotherapy, the blight of the contemplation of this 'late stage' lies on the doorstep of the medical profession.

"I think the trouble with the first doctor is that he 'put all his eggs in one basket.' He used only diathermy. Manufacturers are partly to blame for this. Their booklet literature, naturally, refers only to that which their outfit produces. The writer's treatment of chronic prostate trouble may be illustrated by a simple analogy. The farmer, to renew an old, red, hardened, muddy martingale of his harness, washes it off, puts it in an oven under a prolonged gentle heat, then soaks it with oil, and when he realizes that thorough penetration of the oil

is effected, he begins to manipulate the strap, or otherwise a type of massage. These respective maneuvers have their sequence as well as their need. The chronic prostate patient experiences constitutional nervousness, sluggish abdomen, generally congested pelvic tissue, contracted unhealthy bladder, lethargic rectum, probably piles, pelvic motor nerve impairment, all apart from the individual idiosyncrasy.

"After the bowels are flushed, I first start the abdomen towards better tone with Diathermy followed by surging Sinusoidal. Rapid Sinusoidal treatment to lower spinal nerve plexuses. This type of treatment clears the prostatic environment of stasis, and is imperative. You must have favorable surroundings. Diathermy with metal mesh plate to whole perineum working against a bifurcated cord to plates, one over bladder and the other over sacral region; at times disconnect one bifurcated cord and again the other, which will regionally concentrate. This one change is only typical of many innovations for which your experience must be on the alert.

"Now for prostatic massage, the deep, prolonged, culminating surge, special applicator in rectum, absolutely against prostate; and I have apparatus for making sure of maintaining what I set. The current won't go through an old, petrified prostate if it can get easier media. Here is where haphazard procedure fails.

"The type of surge makes all the difference. I use here a type of machine that, in its pull, lacks polarity effect, because with some of my Sinusoidal wave outfits, before I could effect sufficient pull to suit me, the patient would be indicating a feeling of bowel evacuation necessity. The indifferent pad I place over the bladder to improve its condition indirectly. Occasionally I use an insulated flexible olive tipped electrode in the penis, operating just where you feel the insertion offers resistance, using the same surging current. Sometimes, with considerable urethral narrowing, I employ galvanism, positive pole if tenderness and tendency of slight manipulation to make a little showing of blood; or negative pole if I desire some softening. The surge I use is slow, starting from zero, gradually reaching its zenith of pull, which wringing effect is pro-

longed, for obvious reasons, before retiring. I use sponge disc electrode with surge throughout urethral tract posteriorly outside penis. Diathermy with a rectal electrode is used in prolonged treatments and not too heavy for its general metabolic effect.

"You have to deal with enlarged prostate, nerve force exhaustion, constricted urethra, atrophied irritable bladder, pelvic congestion and stasis; and in the wake of it all is general nervousness with its by-products. How far reaching are your results, of course, has many determining factors, but you will have very beneficial effects with which, under the circumstances, both doctor and patient will be pleased; so much so that the first doctor will not enquire about his failure nor the second doctor acknowledge, 'Yea—even so.'"

A Brief Outline of the Course in Physiotherapy

For Physicians' Office Assistants

Thorough training in the use of Physiotherapeutic apparatus, which will provide skilled assistants for physicians, is assured through this comprehensive course.

The course will be highly intensive, and covers Physical Therapeutics thoroughly, including all branches of electrotherapy and massage. Three weeks constant attendance is required. Each day is divided into six one-hour periods, starting at 9.00 A. M. and ending at 5.00 P. M., with a two-hour luncheon recess. The work for each period has been very carefully and completely outlined, to the end that every minute shall count and no time be wasted in aimless discussion. A trained nurse, familiar with Physiotherapeutic apparatus and experienced in teaching, has charge of the work.

Following is a brief outline of the subjects covered in the course:

Outline

1. *General Office Procedure*—Including specific consideration of general nursing practice in connection with Physiotherapy. Also care of equipment.

2. *Anatomy*—Will be reviewed briefly in connection with the instruction in massage.
3. *Massage*—Swedish method for massage of body will be given, including active and passive exercises.
4. *High Frequency Currents*—Will be considered as to their source and application, as well as the proper manipulation of the machine. Actual practice in applying electrodes and administering the treatments will be included, giving Medical Diathermy according to the various technics; also Auto-Condensation and Vacuum and Non-Vacuum Tube applications.
5. *The Galvanic, Sinusoidal and Interrupted Galvanic Currents*—Will be considered as to sources, types of currents, machines for obtaining currents, manipulation of machines and application of electrodes. Particular attention will be given to the Morse Treatment for Intestinal Stasis.
6. *Phototherapy*—Including both the Heat Rays and Actinic Rays, will be considered both as to technic of application and as to physiological effects.
7. *Inspection Trips*—Through the Fischer factory, to see and understand the interior construction of equipment, and to various clinics in the city, will be made from time to time.

Reciprocal Registry System

Under our *Reciprocal-Registry* system, doctors may enter their applications for Fischer-trained nurses, and nurses may register for positions where such training is required. A nominal charge is made for the course, covering both training and laboratory fee.

First classes started November 24, and extend through until December 13. The second series will begin at 9.00 A. M. January 5 and close on January 24. Prompt registration for this second series is urged, as reservations undoubtedly will be exhausted early.

Doctors and nurses desiring further information are requested to communicate with Mr. H. T. Fischer, either by letter or by telephoning Armitage 0322.

Diathermia and the Physiological Treatment of Cancer

By ALBERT C. GEYSER, M. D.

New York City

In a paper read before the ninth annual convention of the American Association for Medico-Physical Research, and printed in the Journal of that Association, Dr. Geyser discussed at some length the nature and causes of cancer. Of special interest to our readers are the following excerpts from this article which deal with the use of diathermia. We quote verbatim:

Some of the Research Findings

In the third report of the Imperial Cancer Committee (1908) Haalan, at the suggestion of Ehrlich, undertook some tests with heat upon cancer tissue intended for inoculation. The result was that when such tissue was heated for thirty minutes to 111.2 F., the tissue was no longer viable when transplanted. . . . Jenson repeated the experiment and, in the annual report of the New York Cancer Laboratory, 1910, shows that all cancer cells die when heated to 116.6 F. for thirty minutes; Leob found that sarcoma cells died when exposed to a temperature of 113° F. for thirty minutes; Vedal showed that nearly all tumor growth was arrested with a continuous temperature of 104° F.; Lambert, in 1912, pointed out the relationship that exists between the degree of heat and the time of action on malignant as well as on normal cells. . . .

Heat Electrically Applied

Electric coagulation, cathophoric sterilization, fulguration and cauterization are methods wherein heat is used to a degree of complete destruction of malignant cells in situ. I shall omit the description of these because they are in reality akin to surgery; they attempt to kill, destroy and remove the offending cells from the system in toto.

Physiological therapy does not consider the histological nor the anatomical formation or location of malignant growths;

it endeavors to deal *only and entirely with the physiology* of such cells.

It has clearly been shown that heat of a certain degree destroyed tumor cells, yet in no way affected normal tissue. It is also a well known fact that dry or moist heat applied to the living body can only penetrate three to five millimeters. All of the good effects observed from the application of moist or dry heat is due to the gradual heating of the entire blood volume and to the reflex effects of local heating.

In the diathermic phase of a high frequency current we have an agent that heats the tissues *through and through* without practically exerting any influence upon the outside. A malignant growth is of a much firmer, harder consistency and with a lessened circulation than normal tissue; it is therefore especially adapted to the *storing* and *retaining* of heat, when this is artificially supplied. In fact the malignant mass is *always* of a higher temperature *after applying diathermia* than the surrounding normal tissue. Under these circumstances it is easy to maintain a tissue or an organ in a state of elevated temperature for hours.

From practical experience it has been shown that when the entire malignant growth has been subjected to an increase of *three degrees* of temperature for sixty minutes daily its *physiology* is markedly interfered with. Cachexia is prevented or removed; the tumor mass undergoes a retrograde metamorphosis, individual nodules soften and they become smaller and finally disappear; pain ceases entirely; discharges lessen and lose their offensive odor. . . .

Technic of Diathermia

Reference has been previously made to the thermic effects upon cancer cells. In all of those tests the cells had been *removed* from the patient for the purpose of transplantation. It was then shown that these cells, after the application of certain degrees of heat to them were no longer viable; therefore did not produce cancer upon the experimental animal. It is not our desire to remove cells and then destroy them. We intend to *leave the cells in situ*, but by the application of an

electric current cause them to become heated to exactly the *same degree* of temperature as the experimented cells. It is not our object to interfere with their anatomy, but we *do want to change their physiology*. To do this it is necessary to include the entire tumor between the two electrodes of a high-frequency current. With breast or superficially situated skin cancers this is quite simple. With intra-uterine and rectal cancers, while a little more complicated and uncertain, nevertheless practical results may be achieved in eighty per cent of the cases.

In the case of breast cancers, a suitable electrode is applied directly over the lesion, the other electrode containing *at least* four times the surface area, is placed directly opposite upon the dorsum of the patient. The current is turned on to the point of tolerance, which is usually about fifty milliamperes to each square inch of the anterior electrode. If the skin overlying the growth is as yet intact, the reading may go as high as one hundred milliamperes to the square inch. From forty-five to sixty minutes should be consumed for each treatment, repeated daily or at least on alternate days.

When the growth is situated in the cervix uteri, or rectum, a suitably shaped electrode is placed in position, then a larger anterior and posterior electrode are placed on the skin of the abdomen and back of the patient, these two large electrodes are short circuited and led to one binding post of the high-frequency machine. The intra-uterine as well as the rectal cavity will bear temperatures considerably higher than the external skin. It is not uncommon to use 200-300 or even 1,000 milliamperes to the square inch of area in these mucus membrane applications. The treatments should be given daily or at least on alternate days for at least two months, then once per week for an indefinite period.

Let it be thoroughly understood that the application of diathermia *does not necessarily* remove the growth but it *does interfere* with the physiology of the cancer cells in such a manner that the previously present cachexia disappears, there is a complete cessation of pain, all lymphatic enlargements subside,

the patient gains weight and appears to all intents and purposes normal.

After Diathermia has been used for a sufficient length of time, and these constitutional changes have been brought about, there is no reason why the growth should not be removed surgically or otherwise, because practically all chances of recurrence have been forestalled. The growth which was previously malignant, may now be looked upon as a benign tumor and dealt with accordingly.

Use of the Cervical Thermophore

The following information, contained in a letter written by Budd C. Corbus, M. D., of Chicago, in answer to a query from Dr. E. L. Hergert of Brooklyn, N. Y., may well prove of value to many or our readers.

"Concerning the Cervical Thermophore, it is anchored to the set screw of the bivalve speculum, either by a piece of wire or string. There is no danger of short circuiting if the electrode is firmly fixed within the cervix. If one has a ring stand holder or any such device, it can be substituted for the method described.

"Answering your queries: (1)—The Leucorrhoeal discharges that remain after thermophore treatment are best treated with topical applications of Mercurochrome or a continuation of Hot Vaginal Sitz Baths with the vaginal speculum.

"(2)—Non-Gonorrhoeal Endocervicitis is always greatly improved with Diathermy but barring laceration from childbirth is always systemic in origin and calls for systemic treatment. Always put the whole tip of the thermophore into the cervix or you will have a short circuit.

"(4)—The black cap that comes with the instrument is used when the thermophore is introduced in the male. The long rubber cap is substituted for the short one, then you have the long electrode for the male urethra. The reasons for the thread are obvious. If the cervix is too small and it is impossible to introduce the thermophore it would be better to use some other treatment. Do not mutilate your patient to use the thermophore.

The Waggoner Physiotherapeutic Lecture Courses and Clinics

By Mel R. Waggoner, M. D., Cedar Rapids, Iowa

Widespread and rapidly growing interest in these classes and clinics is indicated by the increased attendance that has marked the assembly of each succeeding class. Doctors who are keeping pace with the development of physiotherapy find them a valuable source of new information and up-to-date practices.

Classes for the Coming Season Follow:

Detroit, Michigan	- - - - -	December 15th to 20th
	(Wolverine Hotel)	
*Cleveland, Ohio	- - - - -	January 5th to 10th
	(Hotel Winton)	
Los Angeles, California	- - - - -	January 26th to 31st
	(Lecture Hall, Professional Building)	
San Diego, California	- - - - -	February 2nd to 4th
	(Grant Hotel)	
San Francisco, California	- - - - -	February 9th to 14th
	(St. Francis Hotel)	
Seattle, Washington	- - - - -	February 16th to 21st
	(Olympic Hotel)	

*NOTE: In response to many requests, the Cleveland class, which had been canceled, has been reinstated as indicated above.

Personally conducted Courses, Clinics, Lectures

For Details, Fee, etc., etc., write the

Secretary of the Waggoner Lecture Courses, at
1664 N. Claremont Ave., Chicago, Illinois.

(Watch for announcements in Fischer's Magazine)

Diathermy in Urology

WALTHER, H. W. E., M. D., and PEACOCK, C. L., M. D.
(New Orleans)

Medical diathermy is subdivided into *sedative* and *stimulative*. Sedative diathermy produces an active hyperemia, stimulates phagocytosis and revitalizes tissue cells.

The authors report on 73 urologic cases treated by diathermy, either medical or surgical, during the year ending June 1, 1924. There were 11 cases of bladder tumors, 15 lesions of the external genitals (including chancroid, granuloma and warts), 3 cases of gonococcal endocervicitis, 25 cases of gonococcal epididymitis, 1 case of orchitis complicating mumps and 3 cases of gonococcal arthritis.

Negative results in prostate gland cases are attributed to the fact that a portable unit only has been used in this work, which does not deliver sufficient voltage to carry through the dense prostate structures.

Authors think that for treating primary papilloma of the bladder, surgical diathermy has no equal. It offers as much relief to malignant conditions in this viscus as any other one agent. In the latter cases, by means of the open operation, growths can be thoroughly cooked out with surgical diathermy.

Of the 11 bladder tumors treated 4 were so far advanced that cystotomy, surgical diathermy and radium were used principally to check hemorrhage and pain. The other 7 cases responded promptly to diathermy, but they must be kept under surveillance for some years.

Tumors of the urethra in the male can be treated as expeditiously with surgical diathermy (i.e., electro-coagulation) through the McCarthy Cysto-urethroscope as can tumors of the bladder through a cystoscope. Diathermy has been found superior to any other means of destroying urethral papilloma in women.

In the 15 lesions of the external genitals, the authors feel convinced that the procedure materially shortened the time

of convalescence; and particularly recommend it on account of its cleanliness. Diathermy is specific for chancroid.

Although only 3 cases of endocervicitis were treated, the results have been very encouraging. They have used Corbus and O'Connor's thermophore, but varied the technic to the extent of alternating the indifferent electrode between the suprapubic region and the back, so as to treat effectively both anterior and posterior cervical lips.

Sedative diathermy is the most satisfactory of all methods devised for the treatment of epididymitis. One treatment suffices in the majority of cases.

Points in the technic of this are: insulated table on which patient lies; *no air space* between electrode and skin; scrotum supported by insulated shelf; piece of mesh used for active electrode large enough to cover affected organ; patient keeps perfectly still; current starts at 50 milliamperes for one minute and is gradually increased to 1500 milliamperes, the increase being about 50 every 30 seconds.

Most patients will only tolerate up to 750 milliamperes. When the limit is reached it is kept up steady for about 20 minutes.

The results in the 3 cases of gonococcal arthritis were sufficiently striking to warrant their inclusion in this report.

Convention of P. C. P. A. Is a Big Success

The Third Annual Convention of the Pacific Coast Physiotherapy Association, held at the Professional Building in Los Angeles the last week in November, was a highly successful one, according to reports from the west coast city.

Attendance broke all records, and the earnestness and enthusiasm displayed at every meeting was a splendid index of the progress that Physiotherapy has achieved in that section. As one doctor has phrased it, "We are on the right road, and a long way along that road, toward full knowledge and full use of *all* the electrical modalities that are at our disposal today."

Officers and members of the P. C. P. A. are to be congratulated, not only upon the success of their Convention but upon their progress and success as Physiotherapists.

Program for Our Monthly Physiotherapeutic Meeting

Monday, January 12th, and Tuesday,
January 13th, 1925

MILES J. BREUER, M. D., Lincoln, Nebraska.

"Physiotherapy in Internal Medicine" - - 10:00 to 11:00 A. M.

HARRY M. THOMETZ, M. D., Chicago, Illinois.

Tonsil Clinic - - - - - 11:00 to 12:15 M.

L. C. SAMMONS, M. D., Shelbyville, Indiana.

"Physiotherapy in General Practice" - - - 1:30 to 2:30 P. M.

ERNEST CADWELL, M. D., Chicago, Illinois

"The Business Side of a General Practitioner's Life and Physiotherapy as an Aid" - - - - 3:30 to 4:30 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.

Doctor Breuer has kindly consented to remain over for an extra day and will be in our Lecture Room all day Tuesday, January 13th, to conduct clinics and to endeavor to assist you in solving the many and diverse problems which are constantly coming up in this particular line of medical work.

We look forward to two big instructive days and urge those who find it possible to attend to spend as much time with us as they can spare.

NO CHARGE—NO OBLIGATION

H. G. FISCHER & CO., Inc., Phone Armitage 0323
2335 Wabansia Avenue, Chicago

SPECIAL CLINICAL COURSE IN X-RAY and PHYSIO-THERAPY

Monday, January 5th, 1925—Omaha, Neb.

The fifth of a series of ten clinical courses sponsored by the Magnuson X-ray Co. for the purpose of further educating their customers in the uses of these modern therapeutic agents. These meetings are conducted by physicians of the highest standing who have had many years' experience in this work and they deal with the practical side of the question.

PROGRAM

9:00 to 12:00 a. m.—Practical Clinic at Lord Lister Hospital.

2:00 to 5:00 p. m.—Lectures and discussions by:

Leo C. Donnelly, M. D., Detroit, Mich.

Miles J. Breuer, M. D., Lincoln, Neb.

Dean W. Harman, M. D., Ames, Ia.

R. W. Fouts, M. D., Omaha, Neb.

A. L. Yocom, Jr., M. D., Chariton, Ia.

E. B. Kessler, M. D., St. Joseph, Mo.

The remainder of the week will be devoted to clinical work and instructions in practical technic, in charge of Dr. Donnelly and others.

You are invited to bring any interesting clinical cases to Lord Lister Hospital—any of them operated during the clinic will be hospitalized without charge.

NO FEE IS CHARGED FOR THIS COURSE

Is Diathermy Useful in Glaucoma? —In Epilepsy?

DR. CHAPMAN SAYS NO—AND YES

In response to an inquiry as to the value of diathermy in treatment of glaucoma and epilepsy, respectively, Dr. W. B. Chapman of Carthage, Mo., writes as follows:

"Regarding the question 'Is Diathermy Useful in Glaucoma?' It is not. Glaucoma is a mechanical condition. It is caused by a blocking back of the lymph inside the eye-ball and is marked by high intra-ocular tension. In fact, the diagnosis is made by a feeling of hardness of the eye-ball. Diathermy or

any form of heat will increase the tension and aggravate the condition.

"As to the use of electrical modalities in epilepsy, I will say that they are beneficial in the majority of instances; however, if the convulsions are caused by some hereditary condition or are the result of meningitis or some similar condition, little can be done for the patient. I have recently had a couple of patients who were markedly benefited by the use of the Morse Wave Generator and galvanism. Both of these patients were afflicted with colonic stasis and were absorbing a great deal of poison from the lethargic colon. Huge doses of mineral oil and the Morse Wave Generator have straightened both of them out."

New Book on Diathermy in Genito-Urinary Diseases

"Diathermy in the Treatment of Genito-Urinary Diseases, with Especial Reference to Carcinoma," by Budd C. Corbus, M.D., F.A.C.S., and Vincent J. O'Connor, S.B., M.D., is the latest contribution to the literature of Physiotherapy—and a most valuable one.

This book has been written for the express purpose of familiarizing both specialist and general practitioner with the tremendous value of diathermy in the treatment of genito-urinary diseases in both sexes. The medical and surgical methods of its application to these diseases are given in detail.

The compilation of the volume represents more than five years of closely applied study of these methods. Both experimental and clinical results are given in detail.

A complete review of the study of various forms of heat in the treatment of cancer is given, followed by the technique for treating cancer of the penis, bladder, prostate and female urethra.

There are thirty-one original illustrations in black and white and halftone. Every procedure is graphically described.

Copies of this book may be had upon application to H. G. Fischer & Co., 2335 Wabansia Avenue, Chicago. Price, \$5.00.

Thank You, Doctor!

Congratulatory messages from those who attended the Convention at Logan Square Masonic Temple in October have poured in during the past month in gratifying volume.

The majority of these kindly letters embody specific praise of some feature or features of the Convention. Many of them indicate a firm resolve to attend the next annual Physiotherapeutic Convention. Some embody constructive criticism which is heartily appreciated, and which will be valuable in the preparation of future programs. The tenor of all is, "keep up the good work."

As your communications have come in, we have answered them individually. But we want to take this opportunity to say publicly, and very sincerely, "Thank you, Doctor!"

You have given us an added incentive to make the next Convention even bigger and better.

Radiologists and Physiotherapists Meet

Interesting Program at Third Annual Session

The third annual meeting of the American College of Radiology and Physiotherapy was held at the Hotel Sherman, Chicago, November 12 to 14. During these three days, a great deal of ground was covered in lectures and discussions, and doctors who attended expressed themselves as being well satisfied that the time thus used was indeed well spent.

An intensive program, utilizing every hour of the available time, and including addresses by many well known authorities, covered the general field of Radiology and Physiotherapy. An interesting evening session included the annual banquet and the conferring of fellowship degrees.

These annual meetings provide an excellent forum for the discussion of everyday problems and new methods, and there can be no question but that their effects for good are far-reaching indeed. This magazine extends its congratulations, both to those who attended the meeting and to the management.

The Treatment of Malignancies by the Use of Surgical Diathermy and X-Ray*

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

Chariton, Iowa

The treatment of cancer whether it be medical, surgical, X-ray, radium or electrocoagulation has not reached perfection in all types and in all stages of the disease. The physician who can use any or all of the above mentioned methods when properly indicated is the one who is best fitted at the present time to fight the battle of the suffering cancer patient.

Ever since radiation was first recognized for the treatment of cancer the surgeon has referred to the radiologist the worst wrecks wrought by this dreaded condition. For years this effort on the part of the radiologists to check the ravages of the inoperable case has assisted in keeping in the background the real value of this mode of treatment. Nevertheless something had to be done for the suffering patient, and the radiotherapist, even though failure seemed the rule, continued to make improvement in technique and so, with the aid of the manufacturers of apparatus and physicists there has been a great advance in the treatment of malignancies. As a result, radiology has made more advance than any branch of medicine during the last twenty years.

When an inoperable case appears before us, the patient beyond the aid of any treatment, it makes us realize that there was a time in the beginning of this dreaded disease when satisfactory treatment would have prevented his present terrible condition, hence, we feel that the general practitioner and particularly the patient himself, carries a greater responsibility in directing the right treatment to cure these conditions.



Epithelioma near the ala of nose before and after treatment by surgical diathermy.

*Read at a meeting of the Iowa Radiological and Physiotherapy Society, Des Moines, Ia., Feb. 28, 1924.

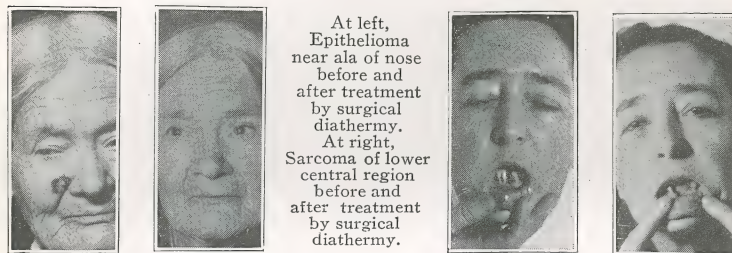
The fact that the surgeon and the radiologist has each continued to give treatment to the apparently hopeless case, while being stimulative to greater advancement, has nevertheless, driven from us many early cases that could have been cured, but the patients drifted hopelessly along waiting until too late or finding their way into the hands of the incompetent aid. Too often the average physician will pass up the small beginning lesion, which is readily removable, with a remark to the patient which leads him to think it is of no importance and can be ignored with perfect safety. The patient also is responsible many times for delay and thinks he will not bother the small growth until it begins to bother him.

Electrocoagulation and Surgical Diathermy

Electrocoagulation is the coagulation of diseased tissues by the Oudin current or one pole of the D'Arsonval current and is to be used for small superficial lesions.

Surgical diathermy is the application of high frequency currents for the destruction of tissues by the heat produced through the resistance offered by the tissue through which the current is forced, without sparking. The treatment differs from the application of the electrocautery or other applications of heat in that the heat with the latter methods is applied from without and does not have much penetrative power. The heat is generated in the tissues themselves and the temperature of the diseased area may be readily raised to a point of coagulation. Therefore it is the penetrating power of this heat which is more beneficial than the thermic cautery, which destroys only by transmitted heat.

Surgical diathermy is produced by the bipolar method of the D'Arsonval current, and should be of low voltage, high amperage and extremely high frequency. The indifferent electrode is a piece of block tin about eight inches in diameter and is strapped to the patient's back or shoulders. This electrode may be wet with a soap lather or used dry. The main object is good contact, and strapping with a good canvas binder



At left,
Epithelioma
near ala of nose
before and
after treatment
by surgical
diathermy.

At right,
Sarcoma of lower
central region
before and
after treatment
by surgical
diathermy.

is all that is needed. The active electrode is smaller and either made up of a point or some other suitable electrode as to the shape and size needed.

In surgical diathermy or electrocoagulation it is necessary to use an anesthetic of some kind. For the superficial lesions which are not too large, a local anesthetic such as novocain or some other similar preparation is used. For the larger lesions we use hyoscine and morphine and find H. M. C. satisfactory. The one-fourth morphine size is given about 40 to 60 minutes before starting, and the one-half size or another full dose is given upon starting, with sufficient chloroform to produce necrosis. Ether is not satisfactory on account of the danger of explosion, especially when working about the face.

There is very little post-operative shock to surgical diathermy and on this account it is especially valuable in the aged. My oldest patient was 94 years of age and had practically all the lower lip removed and part of the upper without any shock and remained in bed only over night. There is a wonderful alleviation of pain. This is almost immediate after recovering from the anesthetic.

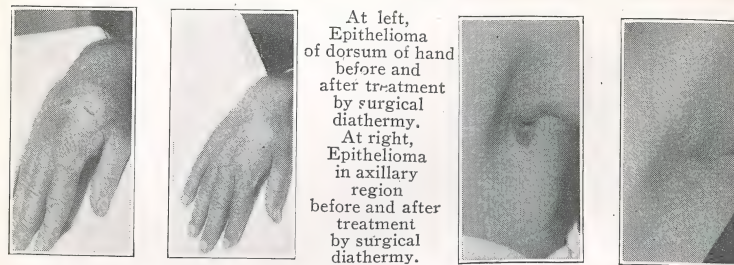
The local application of sufficient heat to the tumor mass destroys the growth. The use of a lower degree of heat to the periphery of the tumor and beyond its limits results in the inhibition of the growth of migrating cells. The dissemination of these cells throughout the organism is further prevented by the occlusion of the lymph spaces and channels, and further by the formation of scar tissue which forms a most desirable

barrier against the new growth. By diathermy the deep penetration of the high degree of heat destroys, or at least inhibits, instead of stimulating the neoplastic cells in the zone just beyond the periphery of the tumor mass. Surgical implantation of the tumor cells into healthy tissue is the unavoidable result of excision, and dissemination of metastases by the opening of lymphatics and blood vessels is not prevented. On the other hand the lymphatics and vessels are closed and metastases are not produced. By this method there is no possibility of transplanting or implanting cancer cells into new tissue. There is less likelihood of recurrence following diathermy. The dosage is accurate and, owing to the extreme heat, there is absolute sterilization of the wound and the growth is removed as a necrotic mass.

There is less tissue sacrificed than by surgery and there is ordinarily a good cosmetic result. If necessary to remove very large areas it may be necessary to do some plastic operation, especially if on the lower lip. If it were possible to destroy a tumor mass by ordinary cautery there would be some danger of the burn producing a systemic poisoning but there is no absorption from the burned area in coagulation on account of the sealed blood and lymph vessels.

The post-operative condition leads to a quick recovery and during this period the unpleasant odor is one of the disadvantages of this method of treatment. Powdered sugar used on the charred mass aids very materially in reducing the odor and I have found that boiling some water in the room with a small quantity of lysol or similar solution added to the same is a deodorizer. Another disadvantage to surgical diathermy is that there is no chance of saving blood vessels and nerves in close proximity to the disease. It is sometimes necessary to do a ligation before or after the treatment.

Any fissure or crust which lasts longer than a month should lead to the suspicion of malignancy and during this period the general practitioner has a great responsibility. Practically all cancers of the skin can be successfully treated by means of X-rays and electrocoagulation, provided they are treated early



At left,
Epithelioma
of dorsum of hand
before and
after treatment
by surgical
diathermy.
At right,
Epithelioma
in axillary
region
before and after
treatment
by surgical
diathermy.

and skillfully. Precancerous conditions in the skin, warts, moles, etc., are best treated by coagulation. Early local destruction of all malignancies by surgical diathermy followed by high voltage X-ray therapy of the local lesion and the draining lymphatic areas should cure all such cases. The combined treatment of surgical diathermy and X-ray therapy offers better promise of a permanent cure than either alone. Poor technique with any form of treatment will usually lead to failure and recurrent carcinoma gives much less satisfactory results. It has been my practice whenever possible to radiate the area involved both before and after the surgical diathermy treatment and to also give another treatment after complete healing has taken place.

No tissue should be removed before treatment for diagnosis. It is better to have a lesion of long standing cured than to know the pathology and die from cancer.

Conclusions

1. There is immediate relief of pain. Every case upon awakening will say that he has no pain.
2. Immediate sterilization of the wound as the heat destroys the mixed infection and foul discharges.
3. Much less danger of extension and metastases than by surgery.
4. There is no shock and practically no hemorrhage.

The accompanying illustrations show the appearance of patients both before and after treatment, and are illustrative of some minor conditions which are treated by this method.

(Reprinted from *The Journal of Radiology*.)

Wide Choice of Modalities Available to Doctors

Away back in the primitive days of medicine, just a few remedies were depended upon for the relief of practically all diseases. Leeches and physic and a small number of simple drugs were the stock in trade of the medical man.

What a difference today! With all the vast fund of medical knowledge and modern drugs at his command, the doctor prescribes exactly those remedies which science has found most efficient for the malady he is treating. In many cases he includes in his prescription one or more special ingredients, to meet special symptoms present in that particular patient. Out of thousands of possible combinations of remedies, he chooses the one which he feels will serve best.

This is universally true today—of medicine. Yet, when we turn to Physiotherapy, what do we find? Not infrequently a condition closely approximating that which formerly existed in medical practice! One machine, perhaps only one modality, out of a field so rich in curative helps!

As a matter of fact, thanks to the enthusiasm and high endeavor of a host of earnest medical men, many distinct modalities are available today to the physiotherapist. Where one or two pieces of apparatus were available a few years ago, physicians of today may justifiably aim to install as many as six or eight; each with its own distinct electrotherapeutic uses, and every one a dependable and efficient mechanism, perfected far beyond the dreams of the earlier years of manufacture.

True, the doctor must always be a doctor first of all; combining wisely his physiotherapy and his medicine. Granting this, our point is, that a broad understanding of electrical modalities and comprehensive apparatus for their application is just as essential in truly modern practice as thorough knowledge of medicine.

Please—Let Us Keep Your Fischer Apparatus In Perfect Working Order

YOUR Fischer apparatus should be working at full efficiency, *always*. That is just good business practice, for you and for us.

We will do our part.

Every Fischer machine is inspected and tested exhaustively before it is allowed to leave our factory. The chance that you will ever have any trouble with it is remote. But if you do—*ever*—no matter how minor or how long after it is installed—whether you require repairs or information—

Please notify the Fischer representative from whom you secured it—or the nearest Fischer man, if you have moved—at once; or write direct to the Home Office.

We will see to it that you get immediate and adequate service.

Fischer service is permanent.

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CHICAGO

A PAGE OF FUN

A certain professor at the University of Chicago, after a trying first-hour class said: "Some time ago my doctor told me to exercise early every morning with dumbbells. Will the class please join me tomorrow morning before breakfast?"

□ □ □

The father asked Clarence his reason for wanting to marry his daughter Lucille. The young man: "I have no reason, sir: I am in love."

□ □ □

Kitty: "What's a synonym?"

Rhoda: "It's one word that means the same as another."

Kitty: "You're crazy."

Rhoda: "Why?"

Kitty: "It's stuff they put on a bun."

□ □ □

"That makes a difference," said Willie, as he snipped off the left ear of one of the twins.

They don't name girls Prudence and Patience any more!

□ □ □

The policeman, hearing the shot, burst into the fashionable apartment. Cringing before him on the floor was the crumpled figure of a woman, weeping hysterically, a smoking pistol clutched in her trembling fingers.

"My husband! Oh, my husband!" she moaned.

"Control yourself, lady," urged the officer. "Where is the corpse?"

"Gone," sobbed the woman. "He went out through the window. I—I missed him."

□ □ □

Mother: "There were two apples in the cupboard this morning; now there's only one. How do you account for that?"

Freddie: "It was dark in the cupboard, and I didn't notice the other one."



THE LAST MINUTE XMAS SHOPPER

**"DON'T PUT THINGS OFF—
PUT THEM OVER!"**

Program for Our
**Monthly Physiotherapeutic
Meeting**

Monday, February 9th, 1925

GEORGE W. FUNCK, M. D., Chicago Illinois.

"The Treatment of Genito-urinary Diseases
With Diathermy" 10:00 to 11:00 A. M.

CARLTON L. ROWELL, M. D., Chicago, Illinois.

"Mixed Physiotherapy in the Treatment of
Gonorrhea and Its Complications" 11:00 to 12:00 M.

D. FRANK KNOTTS, M. D., Chicago, Illinois.

"The Complications of Gonorrhea" 2:00 to 3:00 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.

These three physicians have had a great deal of experience in this particular work, and will be very glad to go into exhaustive detail in outlining the whys and wherefores of not only the disease but the treatments indicated.

Physicians who are interested in physiotherapy as applied to Genito-urinary disorders are urged to come, and to bring their most difficult questions with them! We will endeavor to work out the answers in full.

H. G. FISCHER & CO., Inc., Phone Armitage 0323
2335 Wabansia Avenue, Chicago

FISCHER'S MAGAZINE



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364

JANUARY, 1925

OUR NEW YEAR'S WISH:
MAY YOUR FONDEST HOPES
BE REALIZED IN 1925

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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H. G. FISCHER & Co., INC., 2333-43 Wabansia Ave., Chicago, Ill.

Vol. IV.

JANUARY, 1925

No. 1

Sedative Diathermy In Bronchopneumonia

Case Report By EARL M. WELLS, M. D.

Los Angeles California

Patient male, aged 24; occupation, truck driver. First seen by me on the morning of September 11, 1924, at which time his chief complaints were feverishness, cough and dyspnea. Patient stated that he had been ill since the preceding Sunday night, September 7th.

Family history was essentially negative. Patient had been living with his brother's family. Temperature at this time was 104, pulse 110, respiration 36. Eyes and ears negative. Pharynx slightly injected. Neck showed no adenopathy. Blood pressure 118 over 62. Heart rapid. P. M. I. pulse full, bounding, rate 110. Examination of lungs showed slight increase of vocal fremitus over both lower lobes posteriorly. No difference made out over anterior chest. No increase of dullness to percussion. Many crepitant and subcrepitant rales heard over both bases posteriorly, more extensive in the left side. No rigidity of abdomen, no tenderness to pressure. Liver and spleen not enlarged. Bowels had been regular.

Diagnosis made at this time of bronchopneumonia, bilateral, and routine symptomatic treatment began. A sputum culture sent to the laboratory recorded as non-hemolytic streptococci and an occasional hemolytic streptococci colony on blood agar plates.

On the second, third, fourth and fifth days patient's condition became rapidly worse with frequent bleeding from the nose, temperature becoming elevated on September 15th to 104, respiration 48, pulse 115, blood pressure 128 over 0. The systolic sound could be heard throughout the scale and the heart sounds were transmitted even to the radial pulse. On the following day the patient became very cyanotic, the pulse weak, and the patient breathed with great difficulty.

Diathermy treatments of the sedative type were begun at this time.

These treatments were given twice a day and averaged 2000 milliamperes over thirty-minute periods, 6x8-inch chain electrodes saturated with glycerine being used on the anterior and posterior chest walls. On the second day of treatment the cyanosis had disappeared and the patient felt greatly relieved. On this day a treatment was given also at midnight. The patient now began to cough freely, perspiration became profuse, the temperature dropped to 102, pulse 116, respiration 44. On the third day the milliamperage was increased to 2500 and held at that point for a period of twenty minutes, being preceded and followed by a gradual change of milliamperage from and to the "0" point. Cyanosis had now entirely disappeared, the nails were pink and the patient felt vastly better. On the fourth day after the beginning of the diathermy treatment the temperature was normal, pulse 110, blood pressure 116 over 58, but the respiration still continued in the neighborhood of 40 to 44. The fifth day the patient was feeling in the best of spirits, laughing and joking and said he felt very hungry. Diathermy was discontinued at this time.

Convalescence was uneventful and on the seventeenth day of October the patient was discharged as cured.

MONTHLY MEETING NOTICE

You are cordially invited to attend the regular monthly Physiotherapeutic meeting, which will be held Monday, February 9th, at 2335 Wabansia Avenue.

The Value of Diathermia in the Treatment of Biliary Lithiasis

J. J. Rouzaud and J. Aimard, in *La Presse Medicale*, state that diathermia possesses a great advantage over other therapeutic resources in painful conditions of the gall-bladder by reason of its sedative action, its kindly application, and its effectiveness.

At first electrodes of three or four inches square of padded metal were used over the gall-bladder, but increasing experience led to the use of larger electrodes, since it was seen that not only must the gall-bladder itself be treated, but also the bulk of the hepatic mass, the polar plexus, and the hepatic motor and sensory branches of the plexus. Two large electrodes then are placed over the hepatic region, one in front and one behind. The duration of the daily seance should be thirty minutes, the intensity fifteen hundred to two thousand milliamperes.

At the first or second application no more than a gentle warmth is felt, producing a state of euphoria of some minutes or hours in duration. This warmth may be localized beneath the electrodes, or diffused throughout the entire body, or confined to the right side. In the latter case it includes the right shoulder, arm, thigh, and leg. No pain is felt in the bladder after the third sitting. Vesical examination, formerly painful, is now permitted freely, and by the fifth treatment the patient experiences a degree of general comfort, he "feels lighter," he can make forced respiratory movements without causing pain in the bladder.

The special indication for this form of treatment is the sub-acute or chronic cholecystitis with or without lithiasis which Chir and Semelaigne have lately described as of great frequency, resistant to treatment, long continued, and apt to recur. It is equally effective in cholecystitis attended by pericholecystitis and pyloric and duodenal adhesions, and in crises of gall-bladder spasm and cases of migraine where sharp pain is caused by pressure over that organ. Ill success, on the contrary, has uniformly attended its application in obese old people

giving a history of gallstones without jaundice and having high blood pressure. In these patients palpation over the locality fails to evoke severe pain and the fluoroscope shows a large gall-bladder "swinging in the abdomen like a pendulum." Gallstones are sometimes discerned.

Not the least advantage of diathermia in the situation now under consideration is the point of differential diagnosis afforded between the gall-bladder involvement and duodenal ulcer. A painful condition here which yields to a series of six daily applications of diathermia is quite sure to be of vesicular origin.

D'Arsonvalization in Treatment of Gout

Andresen, in the Ugeskrift for Laeger, calls attention to his constant success in relieving the disturbances in his fourteen cases of muscular gout with distressing infiltration in muscles, tendons and subcutaneous fat tissue. Massage and baths are only palliative and are painful, but under teslaization the relief was prompt and the infiltrations disappeared, the benefit thus being permanent even in cases of twenty-three years' standing. The sittings were for from fifteen to forty-five minutes, and from twenty to twenty-eight sittings were required to free the patient completely from his symptoms and restore him to active life.

West Coast Physiotherapy Meetings In February

Toward the end of February, a series of highly interesting clinics and lectures will be held in both Los Angeles and San Francisco. Physiotherapeutic problems will be covered in detail, and the newest information as to methods and modalities will be covered by experts. Doctors who are interested are cordially invited to attend these meetings. No charge, no obligation. For full details, write to Robert A. Fischer, 1044 West 6th Street, Los Angeles, California.

Special "Post-Graduate" Course for Physiotherapy Aides

This three-weeks' course is planned especially for nurses and office aides who have had some experience with Physiotherapy, but who desire to improve their knowledge therein. Constant attendance is required. Each day is divided into six one-hour periods, starting at 9:00 A. M. and ending at 5:00 P. M., with a two-hour luncheon recess. The work for each period has been very carefully and completely outlined, to the end that every minute shall count and no time be wasted in aimless discussion. A trained nurse, familiar with Physiotherapeutic apparatus and experienced in teaching, has charge of the work.

There will be general reviews in various lines such as Anatomy, High Frequency Currents, the Galvanic, Sinusoidal and Interrupted Galvanic Currents; inspection trips through our factory and to various clinics in the city.

Entrants for the course must come with the recommendation of a physician, and must have adequate knowledge of anatomy, physiology, etc., so that this post-graduate work will fit in with their former training and experience.

Next Classes in April

Next classes will be held the first three weeks in April. Reservations should be made some time in advance, if possible. Later classes, probably to be held in July and October, will be announced in future issues of this magazine.

Under our *Reciprocal-Registry* system, doctors may enter their applications for Fischer-trained aides, and nurses may register for positions where such training is required. A nominal charge is made for the course, covering both training and laboratory fee.

Doctors and nurses desiring further information are requested to send—or phone—for full details of the course.

Ask For The "Post Graduate Questionnaire"

Diathermy in Asthma

Three Case Reports By MILES T. BREUER, M. D.
Lincoln, Nebraska

Case 1. A girl 22 years old who has had severe asthma for seven years, and has been to every chest man in this part of the country. The case seems to be one of idiopathic bronchial asthma, which means that we do not know the etiological factor. I spent several months studying her case carefully. The chest was very emphysematous, and the wheezes were so loud that I heard them through my stethoscope when I had it applied to the arm for the purpose of reading the blood pressure. Height 5 feet 5 inches; weight 85 pounds; emaciation generally distributed over the entire body. No signs of tuberculosis, either clinically or by x-ray. A large amount of pus was removed from the ethmoid sinus, and several badly infected teeth were removed, but no amelioration of symptoms was noted. All protein sensitization tests were negative. Non-specific protein therapy, calcium therapy with calcium, parathyroids, and ultraviolet light were tried without much assistance to the patient. Adrenalin gave temporary relief from the paroxysms, but its effect wore off in three or four weeks; but it became effective again after a rest of a week or two. Whenever the patient contracted a bronchial infection with a temperature, the asthmatic paroxysms were relieved. There must be a neurotic element in the asthma, as she is always better while in this city, and under my observation, but always worse upon getting home. All cutaneous tests of proteins to which she is exposed at home, such as chicken feathers, dog hair, house dust, etc., were negative. A heavy treatment through the chest from front to back, with diathermy, always produced relief lasting from 6 to 24 hours. The heaviest current that the skin would tolerate was always used. The treatment always felt grateful, and relief ensued shortly after the current was started. Permanent results were not obtained; and probably never will be, because the long standing of the case has produced permanent anatomical changes in the thorax.

Case 2. A typical case of ragweed reaction, in a woman 30 years of age; the skin reaction to ragweed was the best one I have ever seen. She presented herself at the beginning of the season for ragweed pollination, and it was too late to immunize her with the pollen extract. Calcium, parathyroid, and ultraviolet light were started, but produced no immediate effect; though an ultimate development of resistance was established. Immediate relief was experienced from the application of diathermy to the chest, by the same technic as outlined in the previous case.

Case 3. A man 42 years of age, with frequent asthmatic attacks especially following physical exertion; has been employed in a machine shop many years; duration of asthma about a year. Loss of weight, poor appetite, afternoon temperature, slight cough, consolidation signs in the right apex, with granular breath sounds, and reflex signs in the muscles and skin of the shoulder girdle, justified a diagnosis of tuberculosis. Diathermy relieved the asthmatic attacks on about the third application. The diathermy was continued for the pulmonary condition, and kept up about five weeks. During that time he gained fifteen pounds, developed an excellent appetite, and felt much improved. Attacks of asthma were only occasional, and never very severe. The pulmonary condition improved very rapidly; and in this case, the diathermy affected not only the resulting symptom, which was the asthma, but also the causative condition, which was the tuberculosis; the asthma being produced by vagus irritation; therefore, as the tuberculosis improved, the asthmatic spells became milder and less frequent.

It seems to me that diathermy is a very logical treatment for asthmatic paroxysms. The breathing difficulty is due to a spasm of the smooth muscle in the small bronchioles; and one of the chief effects of diathermy is the relaxation of spasm. Of course, attention must be given to the etiology of the asthma; which in some cases cannot be completely eliminated. Often, the removal of the causative factor does not alone produce a cessation of the asthma which it has brought on; and some effort must be directed at the relief of the symptom itself.

Three cases do not establish diathermy as a treatment for asthma; but they will indicate that there must be some cases in which diathermy will give relief. As this idea is borne out by theoretical considerations, it is certainly worth the attention of workers in physiotherapy; and further information should be gathered.

Special Lectures on Genito-Urinary Diseases will be the feature of our February Physiotherapeutic meeting, which will be held February 9th, at 2335 Wabansia Avenue. Physicians are invited to attend.

Please—Reserve Your Copy of The October Convention Reports—Now!

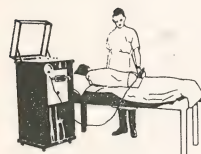
Several hundred reservations have been received for the bound volume of the Reports of Lectures and Clinics given at the Annual Physiotherapeutic Meeting at Logan Square Masonic Temple in October.

This book is now ready for the press, and we are anxious to have all reservations at the earliest possible date, so that there will be no chance of disappointing any doctor who desires a copy. The publication of this cloth bound volume of some six or seven hundred pages is quite a sizeable undertaking, and naturally we cannot produce a large surplus supply.

So—please send in your reservation—on the enclosed card if you wish. The material included, we find, reads even better than it sounded at the Convention and is truly a worth-while addition to the literature of Physiotherapy. The price of the book will be about \$9.00 each, depending on the number of reservations received.

Send Your Reservation to
H. G. FISCHER & COMPANY
2335 WABANSIA AVENUE
CHICAGO

High Frequency in the Treatment of Fissures and Hemorrhoids



C. Schmitt, in the *Bulletin General de Therapeutique*, says that the high frequency current possesses anesthetic, antispasmodic, hemostatic, solvent, and destructive properties which have a most beneficial effect in the treatment of anal fissure and hemorrhoids. Far from precluding surgical intervention in any way, it facilitates such measures by rendering the sphincter pliant and restoring its tone and the elasticity of the neighboring blood vessels, and by improving the circulation not alone of the pelvis but of the entire body.

Inasmuch as the Tesla current has a definite anesthetic effect, the author avails himself of this property for the introduction of cone shaped electrodes with a hemispherical base, by means of which he is able to dilate the sphincter in retrograde fashion with less danger of breaking the glass than when used in the opposite direction. For this purpose he has had an electrode made for his use in the form of a gimlet, conical in shape and carrying on its surface a glass spiral, so that gradual rotation causes it to enter little by little. When hemorrhoids do not cease to bleed at the first treatment by high frequency with large electrodes, the bleeding point should be sought out and touched with a fine electrode, either of metal or glass.

Called to see a woman of eighty-three years, from whose anus he found protruding a mass resembling a large tomato, an irreducible rectal prolapse, the author at once introduced a slender electrode, under whose influence the orifice enlarged and began to wrinkle. A second application of high frequency the next day after eight minutes so relaxed the sphincter that the bowel was readily replaced.

Diathermy A Specific for Gonorrheal Epididymitis

By BUDD C. CORBUS, M. D. and VINCENT J. O'CONOR, M. D.

Knowing that the gonococcus is instantly destroyed at a temperature of 108° F., it occurred to the authors that a suitable instrument could be devised which could induce sufficient heat within the body of the epididymis to destroy the gonococcus in its local invasion, stop the pain and abort the attack.

The patient is placed in the recumbent position and the scrotal and suprapubic region exposed. Shaving soap lather is placed between the skin and the contact point of the electrodes. The entire body of the testis and epididymis is encased between the apposed electrode surfaces and heated uniformly by the d'Arsonval current. In order to effect the greatest degree of heat induction possible in the individual, the current is increased to the extent of cutaneous discomfort. When this point is reached the current is then reduced slightly so that no unpleasant sensation accompanies the treatment. Their routine has been to apply the heat for at least forty minutes, since even at 104° to 106° F. the gonococcus is killed during this time. In those cases seen during the first twelve to twenty-four hours of epididymal involvement by the gonococcus one such treatment has usually sufficed to check the attack and start the process of resolution. In those instances where the inflammatory reaction has been present for a number of days, three or four treatments on successive days have been sufficient to eliminate all untoward effects.

A very distressing funiculitis often accompanies the epididymal involvement and may persist after the symptoms of the latter have completely subsided. This is quickly relieved by placing the instrument in a vertical position with one electrode over the globus minor and the other over the region of the internal abdominal ring. This permits an induction of heat thruout the accessible portion of the vas deferens; this should be continued for forty minutes.

So mild is this attending inflammatory reaction following a heat treatment for gonorrheal epididymitis, that there is ab-

solutely no hydrocele present. Both poles of the epididymis are distinctly palpable as hard, painless nodules, this is rendered more distinct on account of the absence of any orchitis.

Summary

Diathermy provides us with a method of inducing heat within the body of the epididymis, testis and spermatic cord. By using the electrode described above the gonococcus can be rapidly destroyed in its local invasion obviating prolonged inactivity or operative interference. Our results with this original method have been so uniformly satisfactory that we feel free to describe it as one which is specific for gonorrheal epididymitis.

Another View On Diathermy In Glaucoma

An Open Letter From BURTON B. GROVER, M. D.
Colorado Springs, Colorado

In the December number of Fischer's Magazine I note a statement to the effect that diathermy is not useful in Glaucoma. While I do not care to start any controversy, the statement should not go without challenge.

While reports from many ophthalmologists differ as to the value of the high frequency current, locally applied, in this condition, they all agree that it relieves the pain, therefore is useful. The high frequency current dilates the blood vessels which allows the excess secretion to escape, thus relieving the tension.

When Glaucoma is associated with high arterial tension, which is usually the case, autocondensation relieves the intensity of the symptoms and benefits the patient.

Set aside Monday, February 9th, for the monthly Physiotherapeutic meeting at 2335 Wabansia Avenue. Subjects deal with Genito-Urinary disorders.

The Waggoner Physiotherapeutic Lecture Courses and Clinics

By Mel R. Waggoner, M. D., Cedar Rapids, Iowa

Widespread and rapidly growing interest in these classes and clinics is indicated by the increased attendance that has marked the assembly of each succeeding class. Doctors who are keeping pace with the development of physiotherapy find them a valuable source of new information and up-to-date practices.

Classes for the Coming Season Follow:

Los Angeles, California	- - - - -	January 26th to 31st
	(Lecture Hall, Professional Building)	
San Diego, California	- - - - -	February 2nd to 4th
	(Grant Hotel)	
San Francisco, California	- - - - -	February 9th to 14th
	(St. Francis Hotel)	
Seattle, Washington	- - - - -	February 16th to 21st
	(Olympic Hotel)	

Personally conducted Courses, Clinics, Lectures

For Details, Fee, etc., etc., write the

Secretary of the Waggoner Lecture Courses, at
1664 N. Claremont Ave., Chicago, Illinois.

Watch for announcement of further schedule of 1925 Classes in
Fischer's Magazine for February.

Congratulations, Dr. Pope!

"The appointment of Dr. Curran Pope to the vacancy caused by the resignation of Robert H. Winn, of Mount Sterling," says the Louisville Post, "maintains the high personal standard of the members of the State Board of Charities and Corrections."

"Dr. Pope is an eminent neurologist, a specialist in those subtle diseases which, originating in the delicate nerve centers of the human body, play havoc with the mind and the body. For twenty-five years Dr. Pope has been consulting neurologist and lecturer at the City Hospital, besides holding many other positions of usefulness and honor."

"Manifestly, a man with such training as he possesses will approach the problems of the State Board, especially the personal problems, with the special knowledge that their solution requires. Neuroses of nearly every description are present among a large number of institutional cases; and the presence on the board of a man who understands them will be a great help to the board."

Fischer's Magazine wishes to join Dr. Pope's many friends in extending hearty congratulations.

Treatment of Diabetic Gangrene with Diathermia

Cluzet and Badin, in the *Lyon Medica*le: This case was one of moist gangrene of the foot of diabetic origin. Amputation of the limb had been recommended. Diathermia produced complete cicatrization and re-established normal circulation. This result was obtained after four months of treatment given twice a week with one electrode in the form of a metal cuff around the upper leg, the other a flexible plate fitted about the metatarsus. The current was 1250 milliamperes, and each treatment lasted thirty minutes and was followed by the ordinary high frequency effluve over the ulcerated region.

New Corbus and O'Connor Book Ready for Distribution

Valuable Text Book on Diathermy in Genito-Urinary Diseases, With Especial Reference to Carcinoma

This new book was written for the purpose of familiarizing both specialist and general practitioner with the tremendous value of diathermy in the treatment of genito-urinary diseases in both sexes. The medical and surgical methods of its application to these diseases are given in detail.

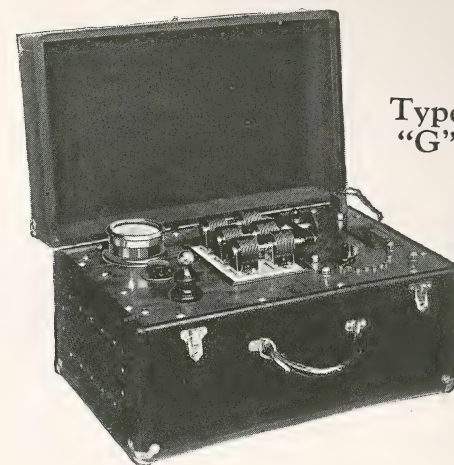
This compilation embraces over five years of study of these methods. Both experimental and clinical results are given. The text includes a full description of the original instruments devised and the technique followed.

There are thirty-one original illustrations in black and white and halftone. Every procedure is graphically described. Price \$5.00. Address your order to H. G. Fischer & Company.

Painful Pleurisy and Diathermia

J. Minet, in the *La Presse Medicale*, cites results in which two patients received diathermia who were sufferers from chronic pleuritic pains. The pains disappeared with remarkable rapidity after a few applications. One patient was an American woman who had been treated by a variety of measures both at home and abroad. The other had been accustomed to winter in the south because she was thought to have consumption. Her cure was so complete that pleural adhesions and the shadows of an apparent cavity seen radioscopically before beginning treatment disappeared after fifteen sittings.

A large plate electrode was used over the anterior thorax and a smaller one at the chief seat of pain behind. At least three amperes of current were applied, sufficient to raise decidedly the temperature of all the tissues between the electrodes.



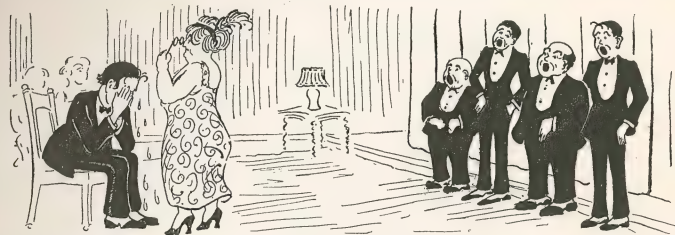
Fischer Portable Diathermy Apparatus

Especially convenient in Pneumonia Treatment with Diathermy and for all other treatments that are given in the patient's home. High grade, efficient—4000 milliamperes available. Range of 4 voltage steps; highest frequency. Small in size, weighs but 50 pounds, costs only \$265.00 complete.

Detailed information on request

Fischer

A PAGE OF FUN



A quartette had just finished singing, "Among the Sleepy Hills of Ten-Ten-Tennessee."

The hostess noticed one of her guests weeping by himself. She inquired sympathetically:

"My dear man, are you a Tennesseean?"

The reply came quickly: "No, madam, I am a musician."

□ □ □
"This vest ain't made right; there's an extra buttonhole at the top and an extra button at the bottom."

□ □ □
"My husband is a deceitful wretch."

"What makes you think that?"

"Last night he pretended to believe me when he knew I was lying to him."

□ □ □
A motion picture exhibitor says: "Comedies are never run on Saturday night in London. The people are too apt to start laughing Sunday morning in the churches."

□ □ □
Jen: "Jack was held up last night by two men."

Hen: "Where?"

Jen: "All the way home."

□ □ □
Efficiency expert: "You are wasting too much time on your personal appearance."

Stenographer: "It's not wasted. I've only been here six months and I'm already engaged to the junior partner."

□ □ □
Jimmie: "We've got a new baby down at our house."

Elderly Neighbor: "How nice—and did the stork bring it?"

Jimmie: "Oh, no. It developed from a unicellular amoeba."

□ □ □
"You took that little blonde from the notions department home last night, didn't you?"

"I'll say I did, and I kissed her good night, too."

"What did she say?"

"Oh, she just said, 'Will that be all?'"

**DO NOT WORRY. EAT
THREE SQUARE MEALS
A DAY—SAY YOUR PRAY-
ERS—BE COURTEOUS TO
YOUR CREDITORS—KEEP
YOUR DIGESTION GOOD—
EXERCISE—GO SLOW AND
GO EASY.**

—ABRAHAM LINCOLN

Program for Our
**Monthly Physiotherapeutic
Meeting**

Monday, March 9th, 1925

EMILE DU VAL, M. D., Chicago, Illinois.

"Industrial Physiotherapy"

Illustrated with motion pictures - - 10:00 to 11:00 A. M.

GUSTAV KOLISCHER, M. D., Chicago, Illinois.

"Malignant Tumors and Electrocoagulation"

Illustrated with motion pictures - - 11:00 to 12:00 A. M.

L. K. EASTMAN, M. D., Chicago, Illinois.

"Physiotherapy in Fracture Work"

Illustrated with lantern slides - - 1:30 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.

One of the most interesting and instructive programs ever offered at our meetings has been arranged for this date.

Physicians and surgeons are cordially invited to attend throughout the session or during those periods covering subjects in which they are especially interested.

In addition to the lectures, each speaker will be glad to answer any questions in connection with your own physiotherapeutic problems.

H. G. FISCHER & CO., Inc., Phone Armitage 0323
2335 Wabansia Avenue, Chicago

FISCHER'S MAGAZINE



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365

FEBRUARY, 1925

I DO NOT THINK MUCH OF
THE MAN WHO IS NOT
WISER TODAY THAN YES-
TERDAY.

—LINCOLN

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.

FEBRUARY, 1925

No. 2

As We Travel Through Life

Not long ago a friend of mine—a chap of about thirty—who had just returned from a vacation trip to the Pacific Coast, dropped in to tell me his experiences.

He was full of enthusiasm, of course, over the wonders of the Grand Canyon, the "Movie Lots," Catalina—he had covered a great deal of territory in rather a brief period of time. But one phase of his experience struck me as peculiarly interesting. He complained that he had run across very few people of his own age in the course of his travels.

"Nearly all the other travelers I met were elderly," he explained, "and while they were splendid folks, of course, they weren't so much interested in me and my viewpoint and ideas; I was too young! So, I was more or less of an outsider in the various groups that formed from time to time among those tourists."

While I endeavored to show proper sympathy, I was not particularly affected by my young friend's complaint! He was brown as a berry, he had a sparkle in his eye, a snap in every movement that showed the five weeks and the several hundred dollars he had spent on his trip were well invested, indeed.

Rather, my heart went out to the stay-at-homes—among whom I am included! The business and professional men, who are plugging away, year after year, with hardly a let up, and who will do their traveling, no doubt, when they are "elderly," like the people my friend encountered on his trip.

Bromides and proverbs are somewhat out of fashion. Yet nearly always they express true ideas in brief and cogent form. So, I call to your attention, doctor, an old favorite—"As we travel through life, let us live by the way."

Wouldn't we all be happier—wouldn't we get a better return on the investment of work and worry that we make each year if we took time off, occasionally, for a *real* holiday, such as my young friend enjoyed?

Speaking for myself, I am going to do it. Yes, sir! I am going to take a good long trip up into the Canadian Woods, or perhaps to Europe—in just a few years, when I have attended to a considerable number of business details that are engaging all my attention for the time being!

Diathermy In Primary Carcinoma of the Urethra

There have been only 99 authentic cases of primary carcinoma of the female urethra reported in the literature, and in adding one case to this list, O'CONOR (*Jour. Urol.*, 1924, 12, 159) describes a very extensive urethral carcinoma which was locally destroyed with subsequent complete healing of the urethral and vulvar regions by means of diathermy. Complete urinary function was retained and local symptoms were completely relieved by the procedure. He is quite enthusiastic over the result and suggests that diathermy offers a method which is superior to any previously described in effecting the local destruction of carcinoma of the female urethra. This is especially true if we bear in mind the minimization of metastases by the complete sealing off of the surrounding tissues during the slow coagulation. The procedure is devoid of operative shock, a general anesthetic is unnecessary, postoperative discomfort is slight and even in advanced cases urinary control can be maintained. The treatments which have been tried heretofore for this distressing condition make us hope that diathermy will do in similar cases what it apparently has done in this particular case of the author.

Removal of Tonsils by Electrocoagulation

By ALBERT C. CARLTON, M. D.

177 Post Street, San Francisco, California

When advocates for the removal of tonsils by Electrocoagulation reported the possibilities of this method, the thought arose, was it not enthusiastically over-rated and were not some of its undesirable features suppressed. As any new method courts criticism from adherents of methods in vogue, it gave me the desire to investigate and the result of my observations are herewith presented.

The literature on the subject, which attracted my attention, gave one the impression of ease of performance as simple as an ordinary office treatment. It seemed as though the General Practitioner need only to acquire the special apparatus devised for the purpose and proceed to remove any and all tonsils that came his way without further ado.

While Electrocoagulation has some salient features to commend it, experience has taught me that it is not a procedure to be employed in every case by anyone, but might become an adjunct to those accustomed to performing tonsillectomies in certain selected cases, when the proper technic and understanding has been acquired.

The operation itself can be performed in the course of a few minutes under local anesthesia, but the after effects are of consequence and to destroy tonsils completely at one operation, requires skill and experience. Post operative conditions are comparatively the same as those following tonsillectomies,* varying with the individuality, and the attendant discomfort must be cared for, accordingly.

There is also the additional necessity for disposing of the tonsil slough and caring for the inflammation produced by the electric burn which in some instances, if one is not careful, affects the surrounding pillars.

*Most physicians find the post-operative reaction much less severe than after surgical tonsillectomy.

The acquisition of a working knowledge for the control of the current is incumbent upon the operator that he may keep it confined within the tonsil tissue to be destroyed. The current is invisible and unlike the galvano cautery which is red hot, shows only the result, the coagulated area affected by it.

Electrocoagulation may be defined briefly, as the application of the D'Arsonval high frequency current, measured by milliamperemeter, controlled by suitable apparatus, producing sufficient heat by resistance in its passage to coagulate and destroy living tissue.

Under the influence of a local anesthetic, coagulation is painless, hemostatic, sterilizing, without shock or physical taxation and commends itself to timid patients and to those who for constitutional reasons should avoid general anesthesia, loss of blood or mental stress.

Likewise to those who cannot afford hospitalization, loss of time from work or loss of income, electrocoagulation has its useful purposes.

The destruction of tonsils by the electric current is not new, but recent improvements in apparatus and methods have brought it into prominence and for the past eight months, it has been employed by me in at least fifty instances for the destruction of tonsils, turbinates and pharyngeal hypertrophies.

The apparatus used consisted of a Fischer Diathermy apparatus, with foot control, insulated cords, needle holder and flexible metallic needle as devised by Plank.

The local anesthetic employed in each case was a solution of Butyn one-half per cent with epinephrin, injected into the tissue to be destroyed, no topical application of any kind being used, and the anesthesia was instantaneous and sustained for several hours. Approximately two mils per tonsil was injected, without systemic reaction of any kind being noted.

The amount of tissue to be destroyed at one sitting is important. Small cryptic, imbedded, fragile tonsils or tonsillar remnants of previous operations, so difficult to dissect, are ideal for Electrocoagulation.

Hypertrophied tonsils are not as suitable for destruction at one sitting but can be done in two or more stages at intervals

of three to four weeks, because the smaller the area to be destroyed the less current is required and the less reaction results and the minimum discomfort exists.

Duration of the application depends upon whether the tonsil was soft, fragile or fibrous and bound with adhesions such as remnants left from previous operations. This, practice and the first insertion of the needle, alone will tell.

The character of the current is of utmost importance. The apparatus can be adjusted to deliver the same milliamperage with the different types of current. A coarse vibrating current may produce a greater invisible radiation effecting surrounding pillars, than a soft, smoothly adjusted current. While it would not destroy adjacent muscular structures, inflammation is produced which adds to the discomfort. Muscular tissue would be destroyed if the current exceeded 500 to 600 milliamperes, especially if its use was unduly prolonged. The softest current that will deliver 300 to 400 milliamperes by careful adjustment of the apparatus is most desirable.

The duration of the current can be best gauged by the appearance of the areola of coagulation about the inserted needle. A soft current needs a longer application of the same milliamperage than a coarse current which coagulates quickly, sometimes too quickly for best control. It must be borne in mind that the current passes into the tissue from the needle in all directions including the point and one must exercise care and judgment in the insertion of the needle as to depth and direction.**

The depth of the tonsil must be estimated and at least one-eighth inch radiation allowed for in all directions including the tip, so that no damage be done to pillars or floor.

The Plank needle is flexible and can be bent in the direction best suited to parallel the pillars, not point at or into them. On the average the needle need be inserted about one-fourth inch, and not in excess of one-half inch to destroy the small cryptic tonsil to the capsule, other sizes in proportion.

Thus, with the proper equipment, the patient, with tonsils

**If the needle employed is very thin there is very little radiation beyond the point.

anesthetized, seated in a non-metallic chair or auto condensation seat, with a good light to reflect into the throat; a wood or fibre tongue depressor and the assistant ready to read the milliamperemeter and note the time; consideration having been given to the size, depth and density of the tissue; the apparatus adjusted to deliver the milliamperage and character of current before mentioned; the operation is then quickly performed.

When the effects of the anesthesia have worn off, such pain and discomfort as may exist for the subsequent 24 hours or so, can be cared for as with tonsillectomies.

About the fourth or fifth day, the sequestrum formed from the coagulated tissue, partially liquifies and a fetid odor is noted from the necrosed tissue. This can be modified with antiseptic and deodorizing gargles. For this purpose, a gargle called "Formula B" has been used by me, as an antiseptic, analgesic and deodorant, with complete satisfaction.

Under no circumstance should the slough be forcibly removed or quantities of coarse food be taken during this period, as it will cause bleeding. When the slough separates it can be gently wiped out. The fossae should be cleared by the tenth or twelfth day and healing is complete within a few days thereafter, leaving the contour of the throat and pillars in normal condition, without deformity or adhesions. During the sloughing period the patient may resume his occupation with little discomfort.

Quite different from tonsillectomy, should for any reason, small particles of tonsil tissue remain, it is a very small matter to dispose of them by Electrocoagulation, without trouble to the operator or loss of time or expense to the patient. The removal of small particles of tissue cause little or no reaction and need no subsequent attention.

For patients with systemic disease due to focal infection with suspicion directed to tonsils having no visible evidences of infection where one is hesitant to incur unnecessary expense, Electrocoagulation can be recommended as an easy, economic method of disposing of a possible cause with the least amount of stress upon the already disease burdened system.

I venture to conclude that Electrocoagulation of Tonsils will find its place, when methods of operation and apparatus shall have become standardized, for selected cases as herein mentioned.

(Paper read before the Eye, Ear, Nose, and Throat Section at the Fifty-Third annual session of the California Medical Association, at Los Angeles, May 14, 1924.)

The Skin Resistance in Diathermia

J. Kowarschik, in the Wiener Klinische Wochenschrift, states that the human body interposes a high resistance to the electric current, and the strength of this resistance lies chiefly in the skin. In the consideration of points of practice the resistance of the remaining tissues may be left out of account. But the current belief that the skin resistance to diathermia is the same as that to galvanism or faradism is an error, and it is therefore incorrect to attribute high resistance on the part of the skin to the warmth produced by diathermia, as has been done by every authority.

In 1912, Wildermuth showed by his experiments that the skin resistance to diathermia was surprisingly small, being twice that of muscle but less than that of any other tissue. The author has found the resistance to fourteen volts of constant current to average seven to eight thousand ohms, while Dowse and Iredell in 1920 found that to diathermia to lie between four hundred and fifty and six hundred and fifty ohms, a difference of more than ten times as much for the former.

The latter observers further noted that resistance varies with the flexing and extending of the arm tested, being greater in extension and less in flexion. They also observed, as has the present author, that in diathermia moistening the electrodes adds nothing to the force of the current, in other words does not diminish resistance, although with galvanism it does so conspicuously.

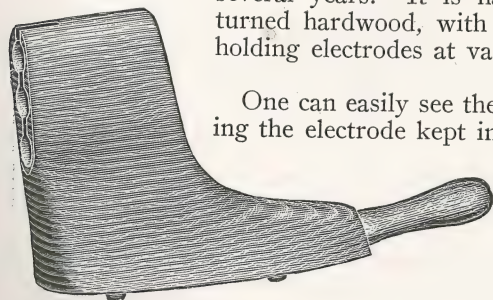
The explanation of these phenomena seems to lie in Gilde-meister's theory of the polarization of tissues, that is of individual cells.

Dr. Morse Designs New Internal Electrode Support

Ever since electricity was first used for rectal and gynecological work, a difficulty has been experienced because of inability to keep the internal electrode in position to procure the best results.

Various supports for the purpose have been devised and on account of their rigidity, usually being fastened to an operating table or floor stand, have been discarded.

Dr. Morse, of Boston, however, has designed for our friends an improved internal electrode support which really meets the indications in a convenient and efficient manner. It is similar to those he has used in his own work for several years. It is handsomely made of turned hardwood, with three apertures for holding electrodes at various heights.



One can easily see the importance of having the electrode kept in close apposition to the area being treated, whether it is a curved sigmoid, a glass one for high frequency or for diathermy.

It is especially useful for bi-polar, vaginal or rectal electrodes, all of which must be held firmly in place throughout the treatment.

The Morse Internal Electrode Support is manufactured and carried in stock by H. G. Fischer & Company.
The price is - - - - - **\$8.75**

Diathermy in Gynecology

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

Types of Infection

In discussing inflammatory diseases of the female organs, it is necessary to consider some of the etiological factors, or the types of infection commonly found. The most common of these are:

- | | |
|-----------------|--------------------|
| 1. Gonorrheal. | 4. Staphylococcic. |
| 2. Chancroidal. | 5. Streptococcic. |
| 3. Syphilitic. | 6. Tuberculous. |

Now in what way will heat react upon these micro-organisms? It is well known by all that these organisms thrive best at the temperature of the blood stream, although they will continue to multiply at temperatures somewhat higher. However, there is a limit to their tolerance. The gonococcus ceases to divide or multiply when subjected to a temperature above 104 degrees F., and is destroyed by a temperature of 140 degrees in 30 minutes. Sampson claims that it is possible to raise the temperature of the tissues to a temperature of 138 degrees F. without damage to them, so you can readily see what advantages we have in treating gonorrheal infections by diathermy alone.

The chancroidal bacillus, or bacillus of Ducrey, is destroyed by only moderate elevations of temperature, and as the lesions are easily accessible, diathermy should be almost a specific for this disease. All common types of streptococci are destroyed by temperatures above 125 degrees F. in from 10 to 20 minutes, while the staphylococcus will withstand 140 degrees for 30 minutes. The tubercle bacillus is also quite resistant to heat and chemicals, but succumbs to 140 degrees in 20 minutes.

Taking these facts into consideration, one can readily see that the heat acts almost as a specific agent in combating the infective micro-organism as well as in producing the general beneficial effect that I have already mentioned.

Application of Electrode

In applying the electrodes, we are guided of course by the location of the disease. In vulvitis and anterior vaginitis, a sponge electrode to the perineum and a larger plate electrode over the lower abdomen are indicated. In inflammatory organs the Chapman special vaginal electrode (see illustration) should be used. This instrument is introduced edgewise into the vagina and rotated into position. When properly applied, it automatically engages the cervix within the cervical bowl and elevates and supports the uterus, while the vulva closes over the insulated vulval groove and helps to hold it in position proper. This is of practical importance, as all other types of vaginal electrodes will work out of the vagina during treatment. Furthermore, the vaginal mucosa will tolerate temperatures greatly in excess of what the skin will stand, so with this electrode it is possible to elevate the amperage considerably above what would be possible if the non-insulated tip came into contact with the external skin. The knees are flexed and widely separated while the electrode is being inserted, but the legs are extended parallel with each other during treatment, and the attachment cord from the vaginal electrode passes down between them to one of the binding posts of the D'Arsonval connection. The larger indifferent electrode



Chapman Vaginal Electrode—Side View



Chapman Vaginal Electrode—Top View



Chapman Vaginal Electrode with Special Thermometer

should be of block tin or silver mesh. It should be about five inches in diameter and is applied over the lower abdomen midway between the anterior superior iliac spines, the lower edge about two inches above the pubis. This electrode is connected to the other D'Arsonval connection of the high frequency machine and the current turned on. I advance the current gradually to 800 milliamperes the first day, treat twenty or thirty minutes and then turn the current off gradually. The treatments are repeated daily at first, and the amperage elevated gradually to the patient's tolerance. Some patients will tolerate as high as 1500 milliamperes, but most of them complain of discomfort and a dragging down sensation in the lower abdomen under too high an amperage.

By the above procedure we treat successfully almost all acute inflammatory diseases of the female organs and a large percentage of the chronic. It is essential, however, that there should be free drainage.

Contra-Indications to Diathermy

Where there is a walled-off abscess within the pelvis, this treatment should never be used. Chief of these is an old pyosalpinx or abscess in the cul-de-sac of Douglas. Either of these conditions, if treated by diathermy, will break down rapidly and rupture inside of the peritoneal cavity. I have had this accident occur in my practice a number of times, but with more careful pelvic examinations I have been able to avoid it lately. The palpation of a small mass to either side of the uterus, or even a rigidity with slight deviation of the uterus to one side or the other, combined with some tenderness on pressure, should make one suspicious of an old pyosalpinx; and if we employ diathermy at all we must proceed very carefully, as one normal treatment will suffice to set it off. Even though there may be no pus present at the beginning of treatment, the increased heat to the affected area rapidly breaks down the devitalized tissue with pus formation. If the direction of least resistance is into the peritoneal cavity, the process will rupture into it with a consequent peritonitis with all of its attendant dangers.

Treatment of New Growths

The treatment of neoplasms brings us to a field of surgical diathermy or endothermy which differs from medical diathermy only in the degree of heat concentrated at one electrode. By using a finely pointed electrode the heat may be so concentrated that it will produce a coagulation, a desiccation or an actual charring of the tissues according to the amperage employed or its method of application. In removing small tumors of any kind from the external genitalia, I employ the following technique:

Touch the tumor near its base with an applicator dipped in pure carbolic acid. A white spot is formed which is anesthetized to the introduction of an injection needle. Using a novocaine solution from one-half to two per cent in strength, according to the field to be anesthetized, thoroughly inject the tissues underneath and about the tumor. If this is carefully done, the patient will feel no discomfort whatsoever from the treatment. I employ the autocondensation pad for the indifferent electrode, or have the patient hold the autocondensation handle in her hands. I believe, however, that I obtain more accurate results when I employ the silver mesh or large block tin electrode over the abdomen as in medical diathermy. This indifferent electrode is connected, of course, to one binding post of the D'Arsonval connection, while the pointed instrument is attached to the other. The machine is set to deliver 300 or 400 milliamperes of current at a very low tension. Insert the point into the tumor near its base, and using the foot switch apply the current until the tissue immediately around it turns white, then switch off the current and insert at another point. Repeat this procedure until the mass is thoroughly cooked. It may be removed immediately or allowed to slough out.

This same method may be employed in removing tumors of the cervix, but unless the growth is attached to the walls of the vagina I usually incise it and cauterize the base with the electric cautery. In working within the vagina a glass speculum is very handy, but I employ the common metal speculum when

using the cautery. In treating the cervix no anesthetic is required, as it is already anesthetized enough and one can burn it with impunity without discomfort to the patient.

The above procedures are applicable to both benign and malignant growths. They may also be employed in the treatment of neoplasms within the abdominal cavity.

Summary

1. Diathermy is not a complicated electrical modality but merely heat caused by the resistance of the tissues of the body to the passage of an electrical current.

2. This so-called diathermy or "internal heat" does not differ from other kinds of heat except by its location within the tissues. Heat applied externally is neutralized by the blood stream so that the deeper tissues are affected only reflexly.

3. Owing to the exceedingly rapid passage of the oscillations of the high frequency current, there is no response to the electrical stimuli in the form of work, and the chemical or metabolic reaction that occurs is due more to the increased temperature than to any catalytic action of the current.

4. In the treatment of inflammations, diathermy has the following gross effects: (a) Bacteria are either killed or attenuated according to their power to resist high temperatures. This is especially true of the gonococcus and the bacillus of Ducey, which are destroyed or their growth is inhibited by moderately low temperatures. The tubercle bacillus and the staphylococcus, however, will withstand temperatures almost in excess of the tissue tolerance, but are attenuated in virulence and rendered quite susceptible to phagocytic activity. (b) Diathermy increases the vascularity of the part with a concentration of opsonins, agglutinins and other bacteriolytic enzymes of the blood; it raises the opsonic index. (c) It accelerates the absorption of waste products and hastens repair. (d) It leaves no bad after effects.

5. Surgical diathermy constitutes the best and safest method employed in gynecology at the present time for the removal of either benign or malignant new growths.

(*Journal of Radiology.*)

Galvanism

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

In these days of intense interest in High Frequency and Actinic Light Therapy, it behooves the student of physio-therapeutics to remember that these are only modalities applicable to the treatment of certain conditions after all, and not forget the oldest established modality of them all.

Galvanism, thirty years ago, was a well recognized and used form of electric energy, with a technic even then fairly well worked out. Many men, of whom I am fortunate enough to be one, have used this form of current over the years since, and found it a reliable and faithful servant when applied in the proper method, to the proper condition, or in other words when properly PRESCRIBED.

Galvanism is after all the only *chemical* electrical modality still possessed by the medical world. Through its unidirectional nature, being a straight flow current with a permanent negative and positive polarization, whereby its ionic effect is definitely established, it still presents the only certain method of gaining ionic effects. And these very effects are the ones most desired in certain conditions which the practitioner meets almost daily in the patients who may come to him for relief. Any doctor not familiar with these truths should investigate. In the parlance of the day he will be "surprised". He will find the scope of galvanic application wide, and the current itself superior to any other modality he may employ. He will find, too, that it will pay him largely to cling to the old gods, even while employing the new which offer him a wider scope of usefulness, rather than any substitute of choice. Because for the galvanic current there is no substitute. It stands alone by itself. And, recognizing this fact, there are today on the market several excellent machines delivering a splendid unidirectional current, which may be obtained and added to the doctor's equipment at a reasonable price.

Frankly this paper is written to recall interest in this current among those who may have in a measure forgotten it in their

employment of the later developed modalities, and to excite interest in those who have never employed it as yet. Galvanism is the granddaddy of the physiotherapeutic family. It will never be anything else. Through it and its modification as the Sine Wave, results can be obtained that are both amazing and gratifying. This statement is made after eighteen years of constant experience. Later in these columns I shall hope to have an opportunity of reciting some of the actual records of cases treated, their type, the technic employed and the end results. They are interesting to anyone engaged in the use of physiotherapeutic methods—they should open the door to that greater interest in this particular method, which I am hoping to excite.

Diathermy of the Rectum

By P. F. JAMES, M. D., Peoria, Ill.

Surgical diathermy differs from medical diathermy only in degree. Diathermy or the passing of an electrical current through tissue increases the metabolism of the parts to which it is applied and raises the temperature locally. The range of diathermy, both medical and surgical, is very wide and its field of usefulness very great.

In this discussion I shall confine my few remarks to surgical diathermy of the rectum. In using diathermy for rectal treatment one has the advantage over surgery in that the patient is not laid up or compelled to be confined in the hospital. Moreover, the patient that refuses surgical operation for hemorrhoids can be relieved and cured by the use of diathermy.

In using diathermy for the relief and removal of hemorrhoids the patient is asked to take an enema the previous night and eat a very light breakfast on the morning of the operation. The field is prepared as for surgical operation. Each hemorrhoid is injected with 1½% novocain until blanched or distended. Then proceed with the diathermy and literally cook the tumor. The current is best controlled by a foot switch—in fact this is essential. The tumor turns white when thoroughly destroyed and can be left to slough off and come away of its own accord.

Thus the hemorrhoid is entirely cured. The slough occurs in from three to ten days and leaves a clean, smooth wound. During the interim from the time the diathermy is used till the tumor comes off, the patient experiences no discomfort or pain and is up about his business.

The anesthetic may, in some cases, be dispensed with, but it is better to use a small amount, and this avoids any pain. The high frequency current soon anesthetises the part and one may proceed to a considerable depth without severe pain and with very little discomfort to patient. Hemorrhage is absent in electrical removal of hemorrhoids. The field being clear one is less apt to overlook a small hemorrhoid. If papillae are encountered they are quickly and easily destroyed by the current. There is little or no traumatism and no open gaping after the destruction of the hemorrhoid by the current.

The one disadvantage of this type of operation is the inability of the operator to see the depth of the actual destruction and thus be able to know when to stop. This knowledge comes through experience. One must treat several cases and note the amount that later sloughs off to be able to judge when enough tissue is destroyed; also to make allowance for the increase in size of tumor due to the infiltration of the novocain. A safe rule to follow is go slow. Select the hemorrhoids causing the patient the most trouble and destroy those first, leaving less offensive ones for a later sitting. Sometimes one is surprised to find them gone when he later prepares to operate. If not, these can be removed when the patient's condition permits.

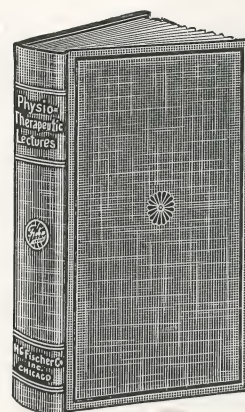
(Journal of the Am. Assn. for Medico-Physical Research, Aug., 1924.)

(See also: Electro-Surgical Removal of Piles, By W. B. Chapman, M.D., on page 28.)

Motion Pictures and Lantern Slides

—will feature the monthly physiotherapy meeting at 2335 Wabansia Avenue, Chicago, Monday, March 9. Full details on back cover page of this magazine.

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Surgical Diathermy

Treatment of New Growths of the Face and Mouth

By ALBERT F. TYLER, M. D., Omaha

The name "surgical diathermy" gives some idea of the method of action of the current, that is, we have a heat through the tissues. I may illustrate this a bit more graphically, perhaps, by calling your attention to the filament in the ordinary incandescent light bulb. In the light bulb, a fine wire filament made of material which is a poor conductor of electricity is compelled to carry the current. As a result of the resistance to the flow of the electric current the wire becomes white hot.

In the use of surgical diathermy the electric current is forced through the tissues. The tissues are poor conductors of electricity and because of this fact they become heated to the point of dehydration with death of the cells.

During the application of surgical diathermy the electrode is cold, the heat originating in the tissues themselves, and later, after prolonged use, slightly warming the metal electrodes by radiation to it. This is in strong contrast to the red-hot soldering irons or the Paquelin cautery so frequently used by the surgeons.

Method of Application

In surgical diathermy a large indifferent electrode, usually a piece of block tin, is placed in good contact with the bare skin on the body some distance away from the field of operation. For example, if one wishes to operate upon the face or mouth the indifferent electrode can be placed on the back between the shoulders. Since the amount of current passes through both electrodes, the small or active one will become the one around which the tissue is destroyed. After the parts to be treated have been thoroughly anesthetized, preferably using 0.5 of one per cent novocaine solution to which has been added 1/1000 adrenalin solution, the active electrode is placed in contact with the tissues and the current turned on. As the tissue blanches about the needle it is pushed slowly forward into the tissue

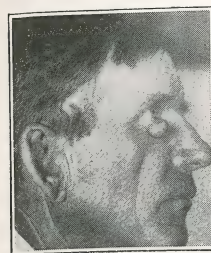


Fig. 1

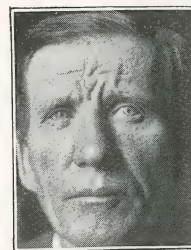


Fig. 2

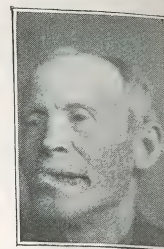


Fig. 3

Fig. 1—Sebaceous cyst arising from the lower eyelid, successfully removed by surgical diathermy.

Fig. 2—Same patient after removal.

Fig. 3—Photograph of a patient suffering from extensive destructive epithelioma of the left half of the lower lip. Successfully treated by surgical diathermy. Photograph taken following removal.

until destruction has occurred to the desired depth. The needle is then removed and an adjacent area is treated in the same manner. This process is repeated until the entire area is covered.

If the mass of tissue is small it may be brushed off with a piece of gauze. If it is large, a pair of curved scissors may be used to advantage to trim it off, being careful to keep away from bleeding. The wound is then dressed with a moist mildly antiseptic dressing which encourages rapid separation of the slough and keeps the parts free from infection. Within a few days after the treatment the tissue which has been dehydrated begins to separate from the normal tissue underneath. The normal tissue appears red, and vigorous granulations soon spring up. This leads to rapid healing, resulting in epidermization with a small pliable scar.

In cases where a large surface has been destroyed, healing may be hastened and considerable time saved after the slough has come off by sterilizing the wound with a few applications of ultra-violet rays from the water-cooled quartz lamp. When the wound is sterile a perforated celluloid window may be placed over it to keep the dressings from touching the granulations. In moderate sized wounds the celluloid shield sold to

protect vaccination wounds has proved valuable. This is easily obtained, readily applied and can be retained without difficulty. Heavy dressings moistened with strong antiseptic solutions retard the advance of granulation tissue in wounds. Given air and a dressing which does not injure them, their growth is remarkably fast. Of course, as soon as the wound becomes level with the skin surface, the growth of the granulations must be retarded so that epidermization can take place. Skin will grow only on a level surface, refusing to extend into a hole or up over a hump.

Daily applications with radiant heat from a therapeutic lamp increase the blood supply and are conducive to the best results. We have found great value in gentle massage administered directly after the application of radiant heat. The massage not only increases the circulation but restores the parts to early mobility and promotes the formation of a soft pliable scar. This is especially important in treatment about the face.

Cases Suitable

Small Lesions: Surgical diathermy is valuable in the early treatment of small lesions on the skin of the face. These can be removed quickly, painlessly, without hemorrhage and no post-operative dressing is necessary. The spot left after the treatment will be no more noticeable than the growth was before treatment and in many cases much less noticeable. The patient can wash the face as though nothing had been done. Healing is complete in a week or ten days.

Operable Lesions: In these the patient has the choice of surgical diathermy or the knife with the same advantages in favor of surgical diathermy as mentioned above.

Inoperable Lesions: These are usually called inoperable, (a) because of location in some difficult or inaccessible place; (b) because they involve an extensive area the removal of which would result in too much mutilation; (c) because they are so vascular that death might occur from hemorrhage during surgical removal.

(a) **Inaccessibility:** The various types of applicators used in surgical diathermy make it possible to reach any portion of the face or mouth or even in the nose where ordinary instru-



Fig. 4



Fig. 5



Fig. 6

Fig. 4—Side view of extensive cauliflower epithelioma involving the right cheek.
Fig. 5—Front view of the same patient showing the thickness of the growth which extended through the mucous surface of the cheek with a small fistula.
Fig. 6—Same patient after successful removal by surgical diathermy.

mentation is possible. The needle electrode is especially well adapted to the treatment of growth on the eyelid or at the inner canthus, or on the lips or cheeks. A longer hat pin electrode covered with rubber gives access to the nares and nasopharynx. In especially difficult cases the rubber covered wire, such as is employed in urological work, can be used.

(b) **Extensive Involvement:** Here the entire mass can be isolated by going around the margin of the growth well out into the healthy tissue. The action of the electric current seals the lymphatics, thus blocking danger of cells passing beyond the operative field during the manipulation incident to removal.

(c) **Vascularity:** Not only are the lymphatic vessels sealed but the blood vessels as well. In vascular growths nourished by vessels up to 60 mm. in diameter, the mass can be removed without loss of blood. In cases of this character the patient should be hospitalized for a few days until the danger of secondary hemorrhage has passed, although this very rarely occurs when proper technique is employed.

Advantages

These may be briefly summarized as follows:

1. **Accuracy of Control:** The current used for this work can be adjusted to any desired effect so that work may be done with perfect safety on the margin of the eyelid, about the inner canthus of the eye, in the nares or the nasopharynx.

2. No Bleeding: The current seals the vessels as the work is being done so that no loss of blood occurs. This is especially valuable in very vascular growths or in the enfeebled patient where loss of blood would be a serious drain upon his vitality.

3. Painless: The great majority of the work can be done under novocain-adrenalin anesthesia with occasional use of cocaine application to mucous surfaces. When general anesthesia is necessary, remove all ether from the room before starting actual work, as a light spark may cause a serious fire.

4. Absence of Afterpain: Patients remark about the absence of pain following the treatment. Even in amputation of the tongue the patient is quite free from pain other than the soreness on movement or touching.

5. Scar: The scar is small compared to the work done and is pliable. Where large areas have been removed, plastic surgery is a great help in restoring the parts.

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Treatment of Enlarged Tonsils by the Indirect Method

By H. B. THOMSON, M. D., C. M., Lansing, Mich.

In the course of my reading I had seen articles on the use of the High Frequency current in treating throat conditions by the indirect method, so upon the first suitable case that prescribed itself I grasped the opportunity to try it. It was a case of enlarged tonsils that were obstructing the lumen of the fauces to such an extent that it was impossible to get a view of the posterior wall of the pharynx. The tonsils were very red and covered with a coating of mucus, but the follicles were not inflamed. The uvula was long and soft, hitting the back of the tongue, while the arches were red and eroded.

I was prepared for action, but not for the surprise I got. While using a wooden tongue depressor on the tongue and applying the electrode to the tonsil the whole field of operation became illuminated from the rays passing through the electrode. Within thirty seconds the first tonsil had receded or shrunk to normal proportions, the second did the same as quickly. The whole fauces could now be plainly seen and examined. After applying the electrode to the remaining surfaces the uvula shortened up and became less flabby while the arches bleached out and became normal in color. The patient remarking about the relief that was felt in the throat.

Upon examining the throat a few days later every part of it was found to be in a normal condition, with no recurrence of the tonsil enlargement.

The whole proceeding took such a short time and the ultimate result was so good that I considered it the best treatment for tonsils I had ever used.

Since then I have used this treatment on many other cases of acute and chronic conditions of the throat and have yet to see it fail to relieve these conditions.

The technique is as follows:

Place your patient on the autocondensation chair, or pad. Attach the pad to the high frequency machine at the center

post on the front of the machine by a well insulated cord. (The central outlet from the Tesla coil.)

Before turning on the current have the patient hold the vacuum electrode which has been placed in contact with the part to be treated. This avoids any sparking when you take hold of it. Use a wooden or insulated tongue depressor to keep the tongue out of the way. Now grasp the electrode with one hand and turn on a fairly strong current with the other. As soon as the current begins passing from the patient to you, the field will become illuminated. Do not keep the electrode on one spot, as considerable heat is generated, but keep it moving slowly over the surface of the tonsil until it has receded to near its normal size. This treatment may be repeated in a day or two, but it is not likely to be required.

(Journal of the Am. Assn. for Medico-Physical Research, Aug. 15, 1924.)

Electrocoagulation in Occlusion of the Rectum

By DR. H. BORDIER, Associate Professor of Medicine at Lyons University, France

L....., 17 years of age, hospitalized February 3rd, 1923, for acute appendicitis, diagnosed by Dr. Foyse, operation was decided upon for the following day and was performed by Dr. Olivier. The patient left the hospital apparently well the 20th of February.

She was readmitted the 3rd of March with symptoms of intestinal obstruction. Rectal examination revealed, above the rectal ampullae, about a finger's length, an intestinal stenosis, due to an obstructing membrane centrally perforated and only admitting one finger. A rectal fistula was made under anaesthesia.

On June 6th she was again hospitalized and operated on. The anal pouch was reopened and relief was immediate.

On June 19th, rectal examination still showed a tight constriction above the ampullae, hardly admitting a finger. It was then decided to dissect this obstruction with the Bordier cautery knife.

Under chloroform anaesthesia, the anus was dilated, in order to separate the rectal walls and expose a clear operative field. A thin tin electrode was placed under the patient. I introduced the sharp edge electrode through the small opening of the stricture and fixed it obliquely on the membrane, in a direction corresponding to the minute hand of clock at twenty to the hour. The current was turned on and regulated till an intensity of 800 M.A. was reached; a small amount of sparking was observed when the tissues came in contact with the diathermy blade in spite of the efforts of the surgeon to prevent this. A minute later the current was turned off and the blade fixed on the membrane in a direction indicated by the minute hand at twenty after the hour, in an oblique direction, from left to right and from above downward.

The above procedure was repeated a second time, with the same duration but the intensity exceeding 800 M.A.

The mal-effect of the intervention of diathermo-coagulation was slight; a very mild thermic reaction was noticed the first day and that was all. A rectal lavage, consisting of boiled and oxygenated water, was prescribed daily.

Seven days after the diathermy treatment, rectal examination showed that the stricture had entirely disappeared. Passage of fecal matter was no longer hindered and the anal pouch was gone.

I have reported this case specially to show that the surgeon can, in many cases, substitute his bistoury for the cautery knife to great advantage in producing a bloodless procedure caused by the vasoconstriction action of the current coming into contact with the tissues and avoiding difficult ligations when the operative field is far from a natural orifice.

(Reprinted from American Journal of Physical Therapy, Dec., 1924)

"Malignant Tumors and Electrocoagulation," lecture by Gustav Kolischer, M.D., Monday, March 9, at 2335 Wabansia Avenue. Other speakers are Du Val and Eastman. Don't fail to attend. (Motion pictures.)

After Activity of the Galvanic Current Therapeutically Administered

S. Erben, in the Medizinische Klinik, says a current passed through a living body leaves there electrical energy hitherto unsuspected so powerful as not only to be perceptible by ordinary galvanometric methods, but even to cause recognizable nerve reactions. After application of a current of thirty to sixty milliamperes Brandenburg has been able to obtain from the skin a current of opposite polarity of a strength, ten minutes after a half-hour treatment, of 0.05 milliamperes, and seventy-five minutes after, of 0.01 milliampere.

The author finds the electrical tension left behind by "Stabile galvanization" much greater than that observed by Brandenburg and not confined to the skin. This secondary current may be readily detected by the reactivity of the vestibular apparatus. When an electrode is placed before or behind the ear, this reaction becomes appreciable on administering a current of five or ten milliamperes. The resultant excitation of the vestibular nerve is evidenced by the inability to maintain a fixed position of the head, trunk or arms. Erben has found this static disturbance to be demotion. The individual is seated with closed eyes and is unaware of the passage of the current so long as its strength does not exceed that mentioned. When the anode is at the ear the uplifted arm on that side falls involuntarily, while the other arm remains raised and instead moves gently toward the midline. Both arms are affected in a special way by the excitation of the sensory vestibular nerve, one moving vertically, the other horizontally. On reversing the current so that the cathode is at the ear, these movements are also reversed, the arm on the same side moving horizontally, the opposite arm falling involuntarily.

If, after obtaining this effect, the current be turned off slowly, the individual is still unable to maintain his arm in abduction, but the special motions are reversed as on reversal of polarity. This must be due to a current contrary to the exciting current. The phenomenon is not immediate; even

five minutes after turning off the current, the reaction may remain unchanged; but a half-hour later it has mysteriously altered. Because of this delayed manifestation the author came to the conclusion that it is a polarity current. The passage of the galvanic current causes a change of concentration in the tract between the electrodes in consequence of the migration of ions. Such polarity currents have been observed by Hering and Hermann in experimenting on extirpated nerves.

The body fluids may be considered an unstable combination of aluminum and changeable metals, varying in ionic composition. The colloid albumin is negatively charged and gravitates on the passage of a current to the anode, while sodium, potassium, calcium, and the rest are positive and gravitate to the cathode. These metallic cations move more rapidly than the colloids and consequently produce a difference of electrical concentration in the affected area. The vicinity of the positive anode becomes electronegative, that of the negative cathode becomes electropositive, and the urge of this difference in polarity to equalization is the cause of the after current.

West Coast Physiotherapy Meetings

Los Angeles, February 23, 24, 25

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Detailed information on request.

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, the only question of importance is their safe and effective removal.

During the past two 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 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 pressure on the rectum. If a man, the suction cup as suggested by Granger is quite effective. When the pile is exposed, grasp it with the thumb forceps and, using 2% Novocain solution, inject a few drops underneath the tumor. 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 large indifferent electrode I employ a large piece of block tin which is warmed and held in place by sandbags. No soap lather is required for contact, and it makes little difference where it is applied. It is also possible to use the auto-condensation pad or handle as the indifferent electrode.

Using a High Frequency machine at low tension, set the controls so that the meter will read about 800 milliamperes when the pointed electrode is brought into contact with the indifferent electrode. By contact, I do not mean actual contact but close enough for the current to stream across. If the machine is

properly adjusted the current should not jump farther than a quarter of an inch.

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. This only requires a few seconds. The injection solution inside the pile gets boiling hot and by scalding the walls of the dilated blood-vessel causes a coagulation and consequent disappearance of the tumor by absorption.

Hemorrhoidal tags or "sentinel piles" are large fibrous tissue and should be coagulated until white. They separate after about ten days and the base heals over with little or no scar. After coagulation, the hemorrhoids will protrude and should be bathed twice daily with hot boric or lysol solutions. 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 two grains of belladonna. These suppositories are on the market and can be secured from any druggist on prescription. I instruct the patient to insert one into the rectum on retiring, and they may be used as often as required to ease the pain.

By the above procedures it is possible to treat successfully any case of piles and the patient go 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. 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 good portion of his 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.

(See also: Diathermy of the Rectum, By P. F. James, M.D., on Page 15.)

New Schedule of Waggoner Physiotherapeutic Clinics and Lecture Courses

By Mel R. Waggoner, M. D., Cedar Rapids, Iowa

Doctors who are keeping pace with the development of physiotherapy will find these lectures and clinics a most valuable source of new information and up-to-date practices.

Classes for the Coming Season Follow:

Seattle, Washington	- - - - -	February 16th to 21st
	(Olympic Hotel)	
Atlanta, Georgia	- - - - -	March 9th to 14th
	(Piedmont Hotel)	
Charlotte, North Carolina	- - - - -	March 16th to 21st
	(Charlotte Hotel)	
Memphis, Tennessee	- - - - -	April 6th to 11th
	(Chisca Hotel)	
New Orleans, Louisiana	- - - - -	April 13th to 18th
	(Roosevelt Hotel)	
Dallas, Texas	- - - - -	April 20th to 25th
	(Adolphus Hotel)	

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A PAGE OF FUN



Anxious Wife: "Doctor, I'm worried about my husband. He seems so absent-minded and muddled of late. Why, I can talk to him for a half hour straight and afterwards he can't even tell me what I've been talking about."

Doctor: "Madam, that's not a sickness, it's a downright gift."

□ □ □

Woman (talking over the telephone): "Send up a bale of hay."

Feed Merchant: "Who's it for?"

Woman: "The horse."

□ □ □

Hospital Superintendent: "What's all that clatter and bang at the end of the hall?"

Nurse: "That's the janitor nailing up silence cards."

□ □ □

The auto, traveling at a tremendous speed, was just about to turn a very dangerous corner.

"Do people lose their lives here frequently?" asked the nervous passenger.

"Not more than once!" said the driver, as he took a firmer grip of the wheel.

Friend (to business man interviewing prospective typists): "But why so particular old man, that she should have light reddish hair?"

Business Man: "Because that's the color of my wife's."

□ □ □

Superintendent of Sunday School (whose enthusiasm runs toward regular attendance): "Out of the entire school, only one pupil is absent today—little Kitty Morgan—let us hope that she is ill."

□ □ □

"Why do bagpipers always keep walking up and down while they are playing?"

"Because it makes them harder to hit."

READ NOT TO CONTRADICT AND CONFUTE, NOR TO BELIEVE AND TAKE FOR GRANTED, NOR TO FIND TALK AND DISCOURSE; BUT TO WEIGH AND CONSIDER.

—BACON

Program for Our **Monthly Physiotherapeutic Meeting**

Monday, April 13th, 1925

- S. J. McNEILL, M. D., Chicago, Illinois**
 "The Treatment of Simple Goitre with a
 Combination of High Frequency and Re-
 sublimated Iodine" 10:00 to 11:00 A. M.
- WM. E. HOWELL, M. D., Chicago, Illinois**
 "Principles and Application of Electro-
 coagulation" 11:00 to 12:00 A. M.
- HARRY M. THOMETZ, M. D., Chicago, Illinois**
 "Tonsils"—Clinic 2 to 3:30 P. M.

How to Get Here:

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

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

BY SURFACE CAR—Western
 Avenue to Wabansia Avenue,
 and one block east to Clare-
 mont.

Dr. Thometz will perform the ac-
 tual tonsil operations—removal by
 Surgical Diathermy—on several pa-
 tients who have been secured for
 this clinic.

Physicians and surgeons are cor-
 dially invited to attend throughout
 the session or during those periods
 covering subjects in which they are
 especially interested.

In addition to the lectures, each
 speaker will be glad to answer any
 questions in connection with your
 own physiotherapeutic problems.

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FISCHER'S MAGAZINE



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366

MARCH, 1925

"THE MEETING OF THE
MINDS OF MEN HAS BEEN
RESPONSIBLE FOR NEARLY
ALL THE PROGRESS THAT
HAS BEEN MADE SINCE
THE WORLD BEGAN."

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

MARCH, 1925

No. 3

Exchanging Ideas

When you're trading in ideas, the ordinary rules of barter and exchange do not apply.

You see, if you have a car, let us say, and some other Doctor has a car, and you exchange cars, you will each have one car after the transaction is completed. That's a regulation exchange, and comes under the rules.

But if you have an idea that is of real value to others, and some other Doctor has another valuable idea, and you exchange ideas—you will each have *two ideas!* For you can give away an idea without depleting your own supply, and in such an exchange, both parties benefit.

However, this isn't an editorial on economics. The point I want to make is, that Fischer's Magazine offers a medium for the exchange of ideas on Physiotherapy. And you, Doctor, are cordially invited to use this medium.

If you have used Diathermy, either Medical or Surgical, in a new or interesting or conclusive way, let us have the news. Send us the case reports, and your own observations and deductions.

Out of the many thousands of readers of this periodical, beyond question there are hundreds to whom your message will be of the utmost interest. Give all the details of your technique; next week or next month, some other physician or surgeon with an exactly similar case will call you blessed!

Diathermy in Dislocations

By B. T. GREEN, M.D., Brookings, S. Dakota

Treatment by diathermy with correct technique gives the patient no electrical effects. He has the sensation of heat and heat only. Treatment by this modality must not be considered from any other standpoint than heat, and it must be used only when heat is therapeutically indicated. By governing heat production, accurately localizing its action in the tissues, controlling its effects, and timing its application, simple heat has a very large field in therapy. The production of heat in the tissues is explained by well-known physical law. The d'Arsonval current, with its low measurable amperage and high controllable voltage, is bipolar with the tissues under treatment completing the circuit. The current meeting the resistance of the tissues through which it passes is transformed into heat. The heat is formed in the tissues and nowhere else, because it is there and there only that the current meets sufficient resistance to make this transformation. This heat may be localized at the will of the operator by the size, shape, and relative position of the electrodes in contact with the tissues. In this way heat is accurately localized in almost any tissue, whether deep or superficial, while the quantity and intensity of the heat production may be accurately governed by the operator through the generator controls. Heat so produced must necessarily be within physiological limits to have physiological effects.

The therapeutic value of heat so produced and localized in pathological tissue is explained by reactions. It produces an arterial hyperemia, increasing nutrition to the part; dilates capillary, venous, and lymph channels, increasing drainage and favoring osmosis; the high degree of heat inhibits bacterial growth and increases phagocytosis; fibrosed areas are softened, the inflammatory tissue dissolved, and the debris eliminated; pain is relieved because pressure is removed. The end-result is repair of the diseased tissue under treatment.

This may be made clearer by citing an illustrative case:

A woman, aged 30, with the following history of injury; accidental dislocation of the left elbow twelve hours previously. Dislocation was reduced soon after the accident, and hot wet compresses applied. The X-ray did not show fracture of bone or bony prominences. The bones of the elbow joint were in good position. Tissues about the joint were extremely swollen. Redness and ecchymotic discoloration. The patient complained of severe pain in the vicinity of the joint, the pain extending to the hand and shoulder.

Treatment: Apparatus, a resonant transformer producing d'Arsonval current, amperage up to three amperes, and voltage up to 30,000, equipped with a hot wire milliamperemeter, an accurate voltage control, and finely adjustable spark gap, connecting cords and suitable electrodes.

The arm is bared and painted with soap lather above and below the injured joint. Block-tin electrodes one inch wide and twelve inches long are applied, encircling the arm six inches above and six inches below the elbow. These electrodes are held in place by lightly applied woven elastic bandages. Flat metal tips on the conducting cords are placed in contact with the block-tin electrodes and held in place beneath the elastic bandages. The conducting cords are attached to the d'Arsonval binding posts. The high tension switch is open and all controls on lowest points, spark gap is closed. All connections are quickly inspected and the high-tension switch closed. The spark gap is now slowly opened and the needle of the milliamperemeter watched. If necessary, the volt switch is advanced. About five minutes will be required to reach the desired amperage, which in this case is 800 to 1,000 milliamperes, depending upon the heat sensation experienced by the patient. A feeling of distinct warmth is all that is allowed. Continue the treatment for about thirty minutes. Observe that the skin between the electrodes is warmed and reddened and that the swelling about the elbow is slightly increased. The patient has already volunteered the information that the pain is greatly relieved.

To stop the treatment reverse the steps as outlined in beginning treatment. When the bandages and electrodes are removed the arm is moved much more freely and with less pain than

before treatment. Cover the arm with cotton, bandage, and adjust to an ordinary sling.

Pain will probably return in four to eight hours but with less severity. Two treatments should be given daily for two or three days, then less frequently, depending upon the pathology and the resulting reactions. After the first few days the arm should be massaged gently and the elbow given motion within the limits of pain. Keep under observation. If there is limitation of motion give similar treatments for the softening and absorption of fibrosis.

Here the diagnosis was clear, the pathology known, the specific treatment clearly indicated and rationally applied with results positive. Nature's inflammatory reactions were imitated and intensified within physiological limits resulting in hastened repair.

(Reprinted from The Journal-Lancet)

Physiotherapy in General Practice

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

Physiotherapy and roentgenotherapy fill a place formerly much neglected in medical practice. They give us something definite to offer chronic cases which formerly we hated to see come back to us. For instance, old cases of chronic constipation and auto-intoxication were drugged with this and that and in exasperation one sometimes thought of dynamite, but now by the judicious use of the Morse wave generator we have something positive in therapy. With a large pad in the back and one in front (using the three positions over the ascending, transverse and descending colon) and using an alternating current brought up to the patient's tolerance, ten minutes in each position, we treat them every other day and give a lubricating oil at night. In a short time the bowels begin to move regularly and the patient shows a general buoyant poise. The treatment with this current helps to restore tone in lax abdominal walls.

Another class of cases with which we have to deal are cases

of high blood pressure and hypertension. By a judicious regulation of diet and autocondensation supplemented by sweats a marked improvement in general health will result. These cases when complicated by nephritis or a sluggish liver are benefited by diathermy to these parts. The improvement is brought about by improving the circulation and by bringing fresh blood to the parts and increasing the catabolism markedly.

Diathermy helps catarrhal deafness and is also a benefit in rheumatism, arthritis, neuralgia, etc. Some men are using it in pneumonia and its action is claimed to be almost specific.

Do not forget the use of fulguration or electrocoagulation in the removal of warts, moles, superficial growths, epithelioma, cancer, etc.

The actinic ray, both air cooled and water cooled lamps, I think, is the best of the various modalities. In cases of aneuria the improvement is marked. I recall a case of pulmonary and tuberculous peritonitis in a girl of 19 years. She had an afternoon temperature of 101, a pulse of 110 and was generally run down. I used fractional radiation following the scheme of the Rollier treatment. There was a general improvement in her condition and she gained 20 pounds in weight and her temperature and pulse returned to normal in about two months.

I used the air cooled lamp in a case of pustular acne and secured remarkable results. The skin was one solid mass of lesions but it cleared up in five weeks under alternately daily treatments. The lamp is also indicated in eczema, scabies, impetigo, pruritis and almost any itching condition of the skin.

The X-ray, of course, is of benefit in diagnosis and in fractures and it is curative in hypertrophied and suppurative tonsils, cervical adenitis, simple and exophthalmic goiter.

Another phase of the subject which is most important to the physician is that this work is practically all office work. This, I think, is one of the big advantages in physiotherapy.

(Reprinted from Journal of Radiology)

Electrocoagulation vs. Tonsillectomy

By L. B. WILLIAMS, M.D., Toronto, Canada

The tonsil question of the past is but a forerunner of the greater question of the future, to-wit, instilling health into throats. This has many phases, each ample for the subject matter of a brief article. There is little analogy between the child's and adult's throat and so sane therapy will vary. In the adult the many vagaries of throats, through disease, are only too apparent to the trained observer who is looking at throats instead of tonsils. This is the reason for the tonsillectomy of the past and the electrocoagulation, instead, for the future. Success and safety are the hinges upon which successful therapy must swing. The writer, as an operator, has had ample opportunity to be familiar with both phases of throat therapy in question, has abandoned tonsillectomy entirely, but in passing, is not unmindful of the good it has accomplished in the march of progress.

Let us take a really serious hypothetical case. A hemophyllic woman, aged 58, very obese, myocardial heart, extremely nervous, throat much congested, tonsils as bad in any way as you have seen or may imagine, and merged into the anterior pillars, uvula dragging on tongue and palate tremulous, thickened pharyngeal mucous membrane, etc. That patient is typically assured of success and also of safety with electrocoagulation, whereas, I believe, any responsible operator would hesitate to subject her to tonsillectomy. If electrocoagulation meets the requirements of this case, it meets the reasonable everyday contingencies.

I would like to emphasize how, in electrocoagulation, one can effect the whole treatment of a throat. The throat is satisfactorily controlled under topical and injected local anesthesia and in high frequency current from a special electrode, a careful adjustment of voltage and amperage, depending upon requirements, is a requisite of the technique.

As an end result I like to see about one-half a normal intact

tonsil remaining. There are many reasons why such should remain, but I know of none why the whole tonsil should disappear, although this is easily enough accomplished. I will argue only one of many points; take infection. In tonsillectomy you only effect as far as you go and that is why, unfortunately, the operator may get too deep—he wants to be thorough. In electrocoagulation your effect reaches far beyond the tonsil, from destruction at your point of operation to a radiating, gradually lessening effect, becoming a vanishing stimulation deeper in the throat tissues. The electric current is not sent in but drawn out of the patient.

This intentional inflammatory reaction in the deeper tissues under Nature's resolution make this tissue, of whatever character, much improved metabolically for the rest of life. How often a trained high soprano voice, following tonsillectomy becomes contralto in character on account of subsequent flaccidity of the throat. The opposite is true, invariably, by the other method. There is no opposing this view because we all know of such. When you examine a throat treated by electrocoagulation, notice what real lifelike physiological looking tonsil tissue it is, that the pharyngeal wall is uninjured and no "dug outs," that the tonsil capsule is intact, accounting for the tautness of the throat, as verified by the patient's remark that "my throat feels more natural and elastic than for a long time." Read this last sentence over again; it is the end result of every day trained electrotherapy. Let your memory ruminate on some of the conditions you have observed following tonsillectomy.

I cannot here go into technique, but if you are contemplating such work, endeavor first to be an observer. If that is not feasible, familiarize yourself on minor operations, such as moles, piles, epitheliomas, etc., first, then try some effect on one tonsil, and so feel your way to safety and efficiency. There is considerable fulness (not pain) from physiological inflammatory reaction following the work, particularly if different parts of the throat, as suggested above, are all treated at the one sitting, and if tissues are much fibrosed.

An ordinary case feels inconvenience for three or four days, but is up and around all the time. I need not here emphasize the dangers, such as narcosis spreading infection, haemorrhage and the like, that are not visionary in tonsillectomy; but can say that we have avoided it all.

In childhood the amount of lymphoid tissue effected by tonsillectomy is but a very small fraction of the sum total of the region, none of which is bad enough to require removal but all of which requires betterment. We have the means today, without any operative procedure, of normalizing such tissue in the child's throat. In the adult throat where often the lymphoid character of a tonsil has become largely fibrous connective tissue, associated with many other local undesirable conditions, while constitutionally the patient may be a real risk, here any treatment whose possibilities are inefficient and whose inherent character has untoward possibilities ought not to be advanced in the face of what is much more efficient and without major risk; namely, experienced electrocoagulation.

Diathermy in Pulmonary Tuberculosis

By BURTON B. GROTES, M.D., Colorado Springs, Colo.

Dr. Grover, in the Medical Herald and Physiotherapist, says he has not used this method for a sufficient length of time, nor in a sufficiently large number of cases, to be able to assert that it is, in itself, a cure for the disease; but he is assured from experience that the method is of great value, and possibly, with greater experience and improved technique, it will be found to be of inestimable service, thus taking its place amongst the recognized methods of treatment of pulmonary tuberculosis.

Diathermy, or heat-penetration, causes a rise in temperature of the tissues through which the current is passing. The heat is generated in the tissues themselves by the passage of the current. The rise in temperature occurs in the body as a whole, owing to the heated circulating blood, and can be measured by the clinical thermometer. But the parts lying between the two electrodes reach the highest temperature. Coincident with this

rise in temperature is engorgement of the parts with blood owing to dilatation of the capillaries. No doubt the rise in temperature is in itself beneficial. By subjecting the bacillus to a temperature several degrees above blood-heat, at which it thrives best, it is inhibited in its growth, if not destroyed. The "warming up" of the tissues, with increased blood and lymph flow, favors phagocytosis—another element in the curative process. Metabolism is quickened, and the elimination of toxins is increased. Finally, no doubt, the passage of the current through the body sets up some reaction which stimulates and increases the natural defensive processes of the body against disease.

Metal electrodes of the required size and shape—generally sheet tin, which is easily cut and moulded—with a number of thicknesses of lint or domette, wrung out of hot saline solution, intervening, are fixed firmly and evenly in position on the patient's chest. One is usually placed in front and the other behind, and their positions varied from time to time so that even heating of as large an area as is required can be performed at the one sitting. The condenser couch may form one electrode. One electrode, the positive or active, is made smaller than the other. Even application is important so as to avoid undue heating at any particular point. Treatment is carried out with the patient in the recumbent position. The current is gradually increased so as to give the subcutaneous tissues time to warm up, otherwise the skin may become unduly hot before they have reached the temperature required. The seance varies from fifteen to thirty minutes, or even longer, being increased as the sittings proceed. Seances are given daily at first, and then alternate days, and finally twice weekly. The total length of time required depends upon the extent of the disease and the progress of the patient.

Immediate improvement and amelioration of symptoms are usually found; catarrhal signs rapidly clear up, sputum is diminished, and cough abates. In a successful case most symptoms will have disappeared in a few weeks. The patient feels better, appetite returns, and weight is gained. The temperature gradually becomes normal in its variations.

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By Mel R. Waggoner, M. D., Cedar Rapids, Iowa

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New Orleans, Louisiana	- - - - -	April 13th to 18th
	(Roosevelt Hotel)	
Dallas, Texas	- - - - -	April 20th to 25th
	(Adolphus Hotel)	
Monroe, Louisiana	- - - - -	April 27th to May 2nd
	(Hotel Monroe)	
Indianapolis, Indiana	- - - - -	May 11th to 16th
	(Claypool Hotel)	
Detroit, Michigan	- - - - -	May 18th to 23rd
	(Wolverine Hotel)	
Pittsburgh, Pennsylvania	- - - - -	May 25th to 30th
	(Wm. Penn Hotel)	

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A Physio-Therapeutic Week in Kansas City

The Seventh Session of the Western School of Physiotherapy will be held in Kansas City April 9th to 17th, 1925. Every student will do actual work in each modality under a competent instructor. There will also be clinics at the General Hospital. Physicians are invited to bring interesting cases for diagnosis and treatment. Such cases will be hospitalized free of charge until operation is completed.

The Seventh Annual Meeting of the Western Physiotherapy Association will follow on April 16th and 17th. Papers will be read by: Frederick H. Morse, M. D.; Gustav Kolischer, M. D.; Miles J. Breuer, M. D.; J. B. Myers, M. D.; Lynne B. Greene, M. D.; A. David Willmoth, M. D.; E. C. Henry, M. D.; Byron Sprague Price, M. D.; Burton B. Grover, M. D.; T. Howard Plank, M. D.; W. B. Chapman, M. D.

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Some Job

Getting out a magazine is no picnic.
If we print jokes, folks say we are silly.
If we don't, they say we are too serious.
If we publish original matter, they say we lack variety.
If we publish things from other papers, we are too lazy to write.

If we stay on the job, we ought to be out rustling news.
If we are rustling news, we are not attending to business in our own department.

If we don't print contributions, we don't show proper appreciation. If we do print them, the paper is filled with junk.

Like as not some fellow will say we swiped this from another magazine.

So we did ———

From the N. C. R. News.

Alopecia

By MILES J. BREUER, M.D., Lincoln, Nebraska

There are a number of classes of alopecia, some of which respond very readily to physiotherapy, and others of which do not respond at all. Before trying physiotherapy in a given case, it is wise to make an attempt to estimate whether or not the treatment has at least some hope of being successful.

First of all, in an individual case of alopecia it is necessary to consider the question of syphilis. Syphilitic alopecia will not respond to physiotherapy alone; specific treatment is essential. In this connection it is well to remember that a negative Wasserman does not prove the absence of syphilis; a thorough clinical investigation of the case is necessary.

Secondly, there are cases of bald-headedness in which the condition has existed for many years, and in which a careful history will reveal the fact that hair-root atrophy must have taken place many years ago, and that nothing short of a miracle can possibly restore your patient's hair. It is only when hair roots remain but are inactive that physiotherapy holds out any promise to the patient of a new crop of hair. Furthermore, in these cases in which no hair roots are left, a careful examination of the scalp will reveal an atrophic glassy condition of the skin with an absence of pore openings, which is an almost certain indication that there are no more hair roots, and that any kind of treatment is hopeless.

On the other hand, cases in which the hair is lost following a severe infection, such as measles or typhoid fever, are very favorable for physiotherapy, and some results of an astonishing nature can be obtained. A careful history is the most important thing to consider in these cases.

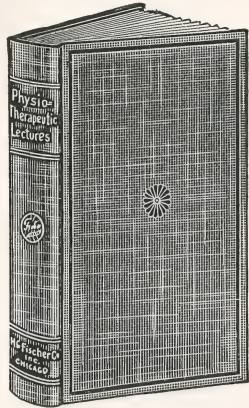
CASE 1: Girl, 17 years old, whose head was completely bald ever since an attack of measles four years previous. She had taken "electric treatments" some time before, which, as far as I can gather, consisted of sparks from a high frequency vacuum electrode. She had also used every possible lotion and salve, and had been the rounds of a number of physicians.

A complete and thorough physical examination was negative; she was in robust health. The treatment I gave her consisted of exposures to the ultra-violet air-cooled lamp at a long distance (24 to 30 inches) for the purpose of getting the long wave lengths. Moderate reaction was secured at every second day. Within two weeks white lanugo hairs appeared. In six months she had a full head of hair and was attending social functions as usual. This was two years ago. At the present time she has a normal head of hair. She has occasionally lost some from a patch or two, but this has yielded readily to a few exposures from the actino ray.

CASE 2: Attorney, aged 35. In the best of physical health; physical examination negative. Had been bald-headed for a number of years. Scalp was not glassy and atrophic, but had the appearance of normal skin anywhere on the body, with visible pore openings. He was advised that actinotherapy might hold out some hope for him, but no definite promise made. He was willing to try it for what it was worth. He persisted in these treatments for almost a year. Lanugo hair appeared in a number of weeks, and in three or four months the scalp which had been bald for so many years was thinly covered with long, fine hair. At the present time the treatment is being continued, and the hair that is present is increasing both in density of growth and in size and thickness of individual hairs.

The aim of the treatment is to increase the nutrition of the scalp. For this reason the long wave lengths of actinic light are used, as they are the biologically synergistic waves. And for this reason frequent and moderate reactions should be secured from the exposures. After a long period of continuous treatment, the scalp loses its sensitiveness to the actinic light, and it is difficult to obtain a good reaction. When this occurs, the sensitiveness and the amount of reaction can be increased by the following methods: (a) a rest of three or four weeks; (b) precede the actinic exposure by an exposure under the deep therapy light, of about 30 minutes; (c) precede the actinic exposure by about 10 minutes of short, thin sparks from the glass high-frequency electrode all over the scalp.

New Books



Physiotherapeutic Lectures

Reports of Lectures and Clinics given at the Third Annual Physiotherapeutic Meeting held at Logan Square Masonic Temple, October 20th to 24th, 1924. Some 700 pages of Diathermy, Quartz Light, X-ray. Limited edition of 1,500 will soon be exhausted. If interested, send your reservation on the enclosed card. Price, \$9.00.

Genito-Urinary Diseases

Corbus and O'Connor

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A. M. A. Meeting Plans Perfected

Atlantic City has always proved to be a popular place for the annual conventions of the American Medical Association; and from present indications, the 1925 session which meets May 25-29 will be no exception.

Convention headquarters, scientific exhibits, technical exhibits and certain meetings will all be housed in the steel pier at the Boardwalk and Virginia Avenue. The general effect will be similar to that of last year's Convention held on the Municipal Pier in Chicago. This was unanimously voted the most successful and popular of all A. M. A. Conventions.

The meetings of the various scientific sections will this year be particularly convenient to the headquarters. None of the hotels in which the sections will convene are more than two blocks from the Pier. Thus, the entire Convention will be compact and convenient. In the headquarters or registration section, there will be a splendid opportunity to meet friends and acquaintances. In the technical exhibits, the physician can come in direct contact with the foremost purveyors of products needed in the practice of medicine.

Those interested in electrotherapy will find the Convention particularly stimulating. Papers and discussions of important physiotherapy topics will be presented in the scientific sections. Most of the leading firms will have ample exhibits and their best technicians present to explain and demonstrate. The unusual opportunity of meeting such an array of physiotherapy equipment under one roof is realized when one reflects on the physical impossibility of the manufacturers' salesmen bringing to the physician's office even one piece of apparatus for demonstration. Here in Exhibit Hall will be truckloads of the most modern equipment.

The scientific exhibits which were so popular at Chicago last year will be of the same high standard. A motion picture theater, with a seating capacity of 1200, will run a continuous program of lectures and demonstrations in connection with appropriate films and slides.

Fibromata

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

Some time ago, I wrote of Galvanism in a general way, and promised to follow on with a consideration of various applications of this current to specific treatment of concrete types of disease. This is the first effort to redeem that promise and convey to the minds of those who are using this electric modality, as well as those who are not, some of the exceedingly useful applications which may be made.

Bear in mind, if you will, what I said in that other paper about the current itself. It is uni-directional, with two definite poles, negative and positive. These are definitely permanent in their characteristics. On this depends the usefulness of this current in a major extent. All of galvanic ionization depends upon it. The Positive is acid. It is a vaso constrictor. It hardens tissues. It checks inflammation and pain. The Negative is alkaline. It softens tissues and dilates blood vessels. It breaks down tissues. It irritates. The Positive will check hemorrhage. The Negative will incite it or is apt to do so. The Positive will ionize metals. The Negative will ionize acids and halogens.

Very well, then to our subject: Fibromata. You've met them, and meeting them what do they suggest? Surgery? Yes. Radium? Yes, also. Galvanism? Have you ever thought it applied? Whether you have or not, I want to say now and here that it does. Surgery, removes the uterus or the growth. Radium, checks hemorrhage, causes the fibroid to regress and stops menstruation and induces an artificial menopause a great many times. Surgery does the same thing also to a large extent—that is, it removes the uterus and the woman doesn't menstruate as a matter of course.

Galvanism does not do this thing. Yet it will cause the fibroma to regress to absolute disappearance a great many times. With me it is a measure always of first choice. If it doesn't

work, and I've seen it fail so seldom as to be negligible—then you have surgery or radium as a latter choice.

Here is the technic. Put your patient on a table in the ordinary position for a gynecological examination. Sterilize a vaginal speculum and a small intrauterine galvanic sound. I use one of pure silver with a small ball tip. Expose the cervix and gently insert the sound as nearly to the fundus as you can. Place an indifferent electrode (the negative in this case) anywhere you like—over abdomen or over lumbar spine. Connect the sound to the positive pole of your machine. Gradually turn on ten, fifteen, twenty, thirty, forty milliamperes of current. Forty will generally be enough and about all the patient will stand. Run for from ten minutes at first to twenty minutes later as the patient accustoms herself to the treatment. Treat every other day until bleeding has stopped, if there was bleeding to begin with, as generally occurs, since it is usually hemorrhage that brings you the patient first. When bleeding has stopped change your sound to one tipped with pure copper. Dip this into ten per cent sulphuric acid and then into pure metallic mercury and rub the mercury to a smooth surface. Insert this and proceed as before. The mercury ionizes. You must amalgamate your sound for each treatment. But—that's all there is to it. And it works. It isn't guesswork. Massey and Kellogg did it thirty years ago. Curran Pope, of Louisville, is doing it and has been doing it for thirty years. I have been doing it for eighteen years myself. And I have patients with whom I have kept in touch since the first, who have remained without symptoms all that time—women below the climacteric who have menstruated, after the treatment, who have not been thrown into a premature menopause. It is amazing and delightful to see them come in frightened, bleeding, almost exsanguinated at times and then to see them gain, grow back to a renewed life and health and enjoyment of existence. If you haven't tried it—try it. It's worth while. The results you get will give you a real thrill of accomplishment, at least the few first times you get them. After that you will not be surprised.

A Plea for Galvanism

By FREDERICK, H. MORSE, M. D.

Boston, Mass.

A very large proportion of the users of physical and electrical methods with standardized equipment are woefully deficient in their knowledge of the physics of the direct current. There is nothing new that is not already known about this fundamental electric force, commonly spoken of in medical literature as "galvanism."

Since the discovery of X-ray therapy, high frequency in its many manifestations, light therapy, the action of static electricity, and the use of mechanical vibration and massage there is, and likely to be for a long time to come, a great diversity of opinion of the physiological action and consequent therapeutic usefulness of the methods mentioned.

The direct current, however, has certain well-known physiological and chemical actions and reactions on animal tissue that alone can apply to it. The author, who has spent many years of his professional life in the use and study of the direct current, is often pained to see physicians in high standing with well equipped offices doing excellent work and practically ignoring an agent capable of doing so much definite and really scientific work. Therefore, the writer is making a plea for a more extended use of a form of treatment that nearly everyone has at hand who makes any pretension of physio-therapy.

The current in question always works noiselessly and many times with but little sensation and perhaps is not spectacular and psychic in its effects as compared with the static, high frequency, and ultra-violet, and the class of physicians to whom the above might apply will find no advantage or perhaps even interest in reading this appeal. The majority of medical men, however, are desirous of knowing the why and how, and when once attained, the technic is simplified and results more pleasing because of understanding the principles behind it all.

Textbooks on nervous diseases, gynecology, and sections of medical literature containing a description of means for the relief of symptoms usually speak of electricity, sometimes definitely enough to use the word "galvanism," without regard to polarity, milliamperage, motor nerve points, and other essentials, as one of the methods that might be employed. They attach as much importance to the technic as they would in ordering the use of a hot water bottle, a mustard plaster, or some useless liniment.

To be honest with one's self and in justice to a patient the direct current should be used with as much discretion, care and intelligence as one would in prescribing digitalis, strychnia, opium, and the like, which are supposed to have a definite action.

A little concentrated study on electro-physics and one can easily become familiar with the prominent physiological and chemical actions insuring efficiency in its application just in proportion as one will watch and study the effects obtained.

It is not necessary to repeat here the special action of the positive and negative poles, the sedative effect of the one and the stimulating action of the other, or just when to apply the current for relief of pain or the improvement of local nutrition. That will come with an understanding of its tissue effects and perusal of textbooks on the subject.

Electrolysis chemically and cataphoresis mechanically alters the amount and distribution of salts necessary to the proper nutrition and function of the various parts of the living organism. By the latter there is a direct transference of the fluids and salts by way of the cell walls, muscle septa, coats of blood vessels, sheaths of nerves, skin, serous and mucous membranes; in fact, all animal membranes which from the physical point of view are all the very best kind of porous diaphragms. Primarily, this action takes place throughout the tissues interposed between the electrodes (not necessarily the nearest way, but along the path of best condition), but secondarily its influence is felt beyond the interpolar region.

The usual source of energy of the direct current is from the commercial supply of 110 volt, and where the alternating

current is the only one available a rectifier is necessary to transform it into the direct current. For fine electrolysis, like the removal of hairs and treatment of small growths where the needle is to be used and where pure electrolysis only is needed, the street current is not the best for the purpose. The original battery formation of cells of low amperage and large milliamperage is best for this work.

Apparatus so constructed that there can be a great variation of amperage and voltage simplifies applications because of the ability to overcome the sometimes objectionable feature of burning sensation (skin resistance).

The subject of contact in all electrical applications is of great consequence not only as far as the therapeutic effects to be obtained but the tolerance and comfort of the patient as well. This is nowhere more important than in the use of the galvanic current where perfect contact in both wires and electrodes is *absolutely* essential.

But with the same intelligent care as one should exercise in doing any operation on the body, surgical or mechanical, the exactitude of action and results obtained justify the pains taken.

(Reprinted from *The American Journal of Physical Therapy*, September, 1924)

Diathermia Treatment of the Female Breast

Vey, in the *Zentralblatt für Gynäkologie*, says close contact of the electrodes to the skin may be secured by suitable size of the plates and by conforming them to the precise shape of the breast. The result of the treatment is increased circulation locally and enlargement of the organ. Abundant secretion of milk takes place at once, ascribable to increased capacity for secretion. It is often observed that the birth occurs several days earlier on account of this treatment.

Electrolysis in the Treatment of Nevi in the Newborn

Mahar, in the *Bulletin Officiel de la Société Française d'Electrothérapie et de Radiologie*, for many years, has employed radiotherapy and electrolysis concurrently in treating facial angioma in very young infants. He has also inspected the result in a certain number of infants from whom Alber Weill, his predecessor at the Hospital Trousseau, had removed angiomas with the X-ray several years earlier. The comparison of results he considers decidedly favorable to electrolysis.

The radiotherapeutic method employed was not that of deep raying. Before the war he used bimonthly applications from water-cooled tubes with a current of one and a half to two milliamperes and a 15 or 16 centimetre spark and aluminum filter of one or two millimetres. Since the war a Coolidge tube with a twenty-two centimetre spark, the same current, and a four or six millimetre aluminum filter. With such doses relief is not to be expected in small nevi short of five or six treatments. Not many disappeared completely; traces were almost always visible long after.

The difficulty of keeping the child quiet, that of localizing the treatment properly, the number of applications necessary, and the uncertainty of result are all grounds for preferring electrolysis. The author now uses only the latter. At the first sitting he tries to reach the large nutrient arteries which feed the nevus. When these are sclerosed, the tumor ceases to grow and portions of its surface lose color. Fifteen days or two months later the platinum needle impales the remaining vessels of size and complete blanching follows. When fine needles are employed and no stronger current than two to four milliamperes, the marks on the skin are small and little by little become invisible.

(From *The American Journal of Physical Therapy*, Jan., 1925)

Monthly Meeting, Monday, April 13th.

See Back Cover Page for Full Details

Electro-Coagulation of Tonsils

By B. C. ROSE, M. D.

To one who has witnessed a tonsillectomy by surgical means either under local or general anesthetic, the electro-coagulation method of treatment will prove well worth investigating. There is growing reluctance toward surgical removal because surgical tonsillectomy done under general or local anesthetic is near a major procedure and a major risk.

It is difficult and almost impossible to remove or even reduce tonsils by the electrical method in children under twelve years of age. They are too young to understand what we are about and consequently will not hold the mouth open nor the tongue down and can not be kept under sufficient control during the operation.

The best subjects as stated are above twelve years of age. A local or general anesthetic is not necessary. Begin with 500 milliamperes of Diathermy current, apply the jump spark holding the needle at close distance to the tonsil, produce a pin point blanch and do not leave the point of coagulation but work away in every direction from that point. The gradual coagulation produces anesthesia. If the tonsil is hard and fibrous then step up the current if necessary.

It makes no difference what type of tonsil we are dealing with in applying electro-coagulation—whether simple hypertrophy, the repeatedly infected inflamed tonsil, those badly diseased and abscessed, the malignant sarcomatous or carcinomatous type, or whether acute or chronic—the prognosis is one and the same. There is no loss of blood, no need of haemostatics, no spread of infection for the simple reason the tonsil is blanched, cooked and charred if you like.

Hospitalization of the patient is not necessary and there is no preparation of the throat, such as sterilization, needed. The electric current destroys the bacteria in the tonsil tissue and penetrates the crypts and follicles better than any antiseptic known to medical science.

I repeat—it is a bloodless operation—can be done in the office and without an anesthetic if but little patience is acquired

by both patient and operator. But if deemed necessary, we would recommend any good, reputable local anesthetic which has little toxic effect. The anesthetic should be injected into the tonsil and peritonsillar tissues.

The small machines should be satisfactory but my preference has been a large machine. The only articles needed other than the machine are a good pair of conducting cords that will not leak current through the insulation to the patient, a foot switch, a long cable capable of reaching the patient with ease that will carry the needle, a wooden tongue depressor made into the shape of a metal one.

If the tonsil is found located beneath the anterior pillar, a kind of hook retractor will be necessary for the assistant to hold the anterior pillar out of line and out of the way of the surgeon. The needle should be insulated to within one-fourth of an inch of the point.

My own technique or method is as follows: First gain the confidence of the patient by assuring him that there will be no pain other than a hot sensation after the first few applications of the jump spark. The patient is seated in front of the operator and near the machine, which is set on the Diathermy current to deliver 500 milliamperes; the patient holds an auto-condensation handle attached to one pole of the machine; the surgeon holds the needle handle which is connected to the other pole of the machine. Now, with a good wooden tongue depressor as described, a strong head light or mirror, the operation is begun. Bring the needle in close-up contact with the tonsil and step on the foot switch. A slight blanch, pin point size, will be observed on the tonsil; at the same time the patient will pull away from the operator. In a second or so the tongue depressor is again applied and the operation is repeated, and so on until complete coagulation is brought about. The hard, fibrous tonsil can be completely charred by the jump spark method in the hands of the careful operator without endangering the peritonsillar tissue or patient in the least. When the operation is completed the patient is told to go about his affairs and to fear no complications other than a slightly sore throat for a few days. More than one application may be necessary,

depending altogether on the amount of coagulation done and the condition of the tonsils previous to the operation. If the tonsil is soft and friable one application may suffice, if large, hard and fibrous, then more than one application may be necessary. Ten to 30 days should elapse between treatments, each time waiting the required number of days for the tonsil tissue to come away.

The actual working time is but a few minutes in most cases, although in some, much time may be required.

(Read before the Garrard County Medical Society February, 1925)

Technique in Typhoid Neuritis

By MILES J. BREUER, M.D., Lincoln, Nebraska

Neuritis following typhoid fever is an inflammation of the peripheral portion of the nerve. If there is only a moderate inflammation, the nerve will recover in from four to six weeks, bringing with it the recovery of nerve functions such as sensation and motion. If the inflammation is severe enough, it will destroy the nerve fibre; then there will have to be regeneration from the nerve-body in the spinal cord, and recovery of function will require from three months to a year.

Your reactions of degeneration will tell you the difference. If they are complete within ten days from the onset, it means degeneration of the nerve fiber. In such a case you have two jobs ahead of you:

1. Promote the nutrition of the nerve-sheath, so as to assist in the formation of a new fibre;
2. Keep the muscles from atrophying to an extent that would render them useless before the nerve regenerates.

The first is accomplished by diathermy and negative galvanism (from a battery, not from a mechanical source of current) along the course of the nerve from the spine to the end of the muscle. The second is accomplished by interrupted galvanism (three or four shocks a day) through the muscle from one end to the other. When regeneration has become fairly well established, use motor-point stimulation.

Do everything gently. There is danger of being too rough all through this procedure.

Galvanism In Stricture

(The following letter was written by Dr. Frederick H. Morse, of Boston, in response to an inquiry.)

"I will assume that Urethral Strictures are meant, but the same principle applies equally well to Asophageal and Rectal Strictures, also Stenosis of the Cervix. The operation is simple but must be definite in action and carefully performed because beyond a certain strength of galvanic current, when a bare electrode is applied to a mucous membrane, ulceration will result. On the other hand, a milliamperage up to a recognized point will cause only softening (electrolysis) just sufficient to bring about results.

"In Urethral Strictures a sound should be used that will just barely or not quite pass the Stricture. This is to determine the size or calibre of the electrode for the work to be accomplished. Of course, the negative pole must be the active one on the metal tipped electrode, most of which in the market are simple olive shaped tips and objectionable because of the shortness of the treating surface. . . .

"The current to be used should not be over 5 milliamperes and I usually use even less. It should be turned on gradually and allowed to remain in place 3 to 5 minutes, adding the positive moist electrode on the back. This procedure should not be repeated more often than once in ten days or longer. In the operation no force should be used as we depend on the galvanic current to accomplish the results. If successful, each following treatment will require larger and larger electrodes.

"Very truly yours,

"September 18, 1924.

F. H. MORSE."

Electrocoagulation in Freeing Pleural Adhesions

Herve in the *LaPresse Medicale* says that in the course of artificial pneumothorax, retraction of the lung may be caused by adhesions which it is very desirable to remove. For this purpose the author makes use of electrocoagulation. The electrode is introduced within the pleura at two neighboring points through an endoscope in order to avoid too large an opening in the serous membrane. The adhesions thus are destroyed under full view. In this way large irregular adhesions may be relieved, and also bands which interfere with the pulmonary movements.

(From Am. Journal of Physical Therapy, Jan., 1925)

"What Is Your Opinion of Fischer's Magazine?"

Several hundred readers answered that question last month in such kindly fashion that we are impelled to reproduce a few of their comments herewith. These are typical of all the answers, and to all our friends we wish to say, "Thank you!"

"I find your little magazine very helpful." — Howard D. Eaton, M. D., Los Angeles, Calif.

□ □ □

"Magazine very helpful and always filed for reference." — E. B. Moynard, M. D., Chateau, Mont.

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"Fischer's Magazine is a real help." — W. D. Spoor, M. D., Schenectady, N. Y.

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"Interesting and useful magazine, appreciated." — L. J. Pankow, M. D., Sioux Falls, So. Dak.

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"I find many valuable hints in Fischer's." — C. R. Fishel, M. D., Tacoma, Wash.

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"Appreciate these magazines and literature." — Wm. O. Thomas, M. D., Clinton, Wis.

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"We like the magazine very much and look for it every month." — John George O'Meara, M. D., Providence, R. I.

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"Fischer's Magazine is very helpful in many diseases." — R. B. Miller, M. D., Louisville, Colo.

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"Fischer's Magazine is very fine." — J. B. Moses, M. D., Crestline, Ohio.

□ □ □

"I find the magazine a great help." — W. C. Swain, M. D., Huntington, W. Va.

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"Enjoy the little magazine very much." — William Martin, M. D., Atlantic City, N. J.

□ □ □

"Magazine interesting and instructive." — J. Sidney Easan, M. D., Coldwater, Miss.

□ □ □

"We use your little magazine constantly." — Edith F. Dowell, Librarian, Fifth Ave. Hospital, New York City, N. Y.

Fischer's Magazine is prepared for Physicians, and almost entirely by Physicians. From the start, we have taken the attitude that this publication is a forum, open to all and for the benefit of all. We want to meet *your* needs. So, if there is any subject on which you would like information and discussion, let us know and we will try to arrange for articles on that subject. Use the enclosed card, if you wish.

Physiotherapy an Adjunct to Orthopedic Surgery

J. E. M. THOMSON, M.D., F.A.C.S.
Lincoln, Nebr.

It will first be necessary for me to qualify my remarks by making it clear that we are forced to use physiotherapeutic measures in an extremely limited manner, because at the present time our hospital facilities give us no opportunity to use these measures on hospitalized cases except as they become ambulatory and can come to the office for these treatments. Therefore, the series of patients from which the study is made comprise strictly those that come under our office clinic.

From December 1, 1921, to December 1, 1922, a total of one hundred and ten patients were given two thousand three hundred and forty-seven physiotherapeutic treatments. This of course includes massage, baking, muscular training, exercise and mercury quartz lamp treatment, etc. This work is performed under our direction by our physiotherapist, Mrs. H. L. Johnson, who has had years of experience in taking care of these cases not only in civil life but in the army hospitals during the war.

There are a definite group of orthopedic cases in which physiotherapy is a tremendous adjunct in treating. The field of its usefulness is yet so young that we are scarcely able to comprehend its full value, and during the first few months of the establishment of this department in our clinic we viewed it with skepticism and doubt of its success, although we had long made use of a so-called massage nurse for a few cases. The growth of prestige of this work has been phenomenal, though we are always mindful of the fact that the accomplishment of the splendid results has been due to the fact that our physiotherapist is a thoroughly trained student of this field and brings her personality into full play in the management of these cases.

The methods employed in the physiotherapeutic treatment of orthopedic conditions are: massage, active and passive motion, muscular training (exercise), baking, packs (hot and cold),

incandescent electric light exposure (1500 d.c.) and actinic ray. Usually no one of these methods is employed alone, but the treatment includes a combination of these, as the case requires.

The class of orthopedic cases on which physiotherapy is employed includes fractures, arthritis and neuritis, osteomyelitis, burns, sprains, soft tissue injuries, open wounds, weakened extremities or backs due to injury, disease and disuse, and disability of the feet, flat feet, pronated feet, acute foot strain, metatarsalgia and anterior foot disturbances.

In considering the series of fracture cases of which there have been twenty-six during the past year have had treatment by physiotherapeutic measures. This method of treatment was of course not begun until the period of immobilization was over, that would bring the fractures into this department after the fourth to the eighth week, when they were either in a protective removable splint or had no apparatus on them whatever. The procedure usually followed for these conditions is first baking, massage, active and passive motion of the limb, and very often where there is unusual swelling and tenderness around the joints following these procedures, the mercury quartz lamp is used to stimulate the tissues in the region affected. Later exercises are used and muscular training where this is necessary. We believe that these measures shorten the period of disability and convalescence particularly in fractures that are near the joint. Second, that by the use of the actinic ray the joint effusion is controlled or retarded, and the tenderness associated with early passive motion is likewise retarded. The stimulation of circulation during this physiotherapeutic procedure aids greatly in absorbing the deep scar tissue and restoring muscular activities and balance to the extremity.

In fractures of the spine similar procedures are used, though the patient is continually in a removable cast or brace. By these methods the aching and soreness accompanying these backs for years after such an injury is markedly diminished. Two of the cases in our series of fractured spines, returned to work three months after the injury; this is an unusually short time after such an injury. Another one having had a bone graft operation had his period of convalescence markedly shortened.

Under the head of arthritis and neuritis there are forty cases. This series includes subdeltoid bursitis and sacroiliac conditions. These two diagnoses are considered together because their general therapeutic management is somewhat alike. Of course the arthritic conditions have a longer period of rest and immobilization usually before physiotherapy is begun, and the patients have a complete physical examination and all possible foci of infection are removed, and internal medication instituted as the case needs. We do not use physiotherapeutic measures until after the active process has been allayed and we wish to bring a return of function to the disused joint. Here the actinic ray properly applied has been of great aid in retarding the joint effusion when manipulative measures are applied. Massage and baking are of inestimable value in bringing these parts back to normal in these series of cases. The actinic ray was used on a certain number for its general stimulative effect on the patient, and was applied to the dorsal and ventral surfaces of the trunk in several instances. It was a great asset in controlling the effusion and swelling, and diminishing the pain in the joint and aiding in obtaining an ultimate cure of the condition.

There were five cases of acute post operative osteomyelitis treated by the actinic ray. This was purely an experimental procedure, and we are not of the opinion that our method had a particular influence on the outcome of the case, as we have other methods of treating this condition that bring about a speedy recovery.

There are four severe burns in this series. All of these were a third degree burn with deep ulcers and heavy keloid scarring. The actinic ray used with massage, baking, passive and active motion and exercises markedly softened the keloid formations, and caused rapid healing of the ulcers. Eight open conditions were treated with a fair degree of success. The virtue of physiotherapy in these conditions was purely from a stimulative standpoint and to retain as near normal function as possible after treatment ensued. One varicose ulcer of two years' standing, two and one-half inches in diameter, which

had not responded to usual methods of treatment, was healed by ten actinic ray applications.

Sprains of the extremities and back make up a large class of cases which respond most readily to the physiotherapy measures. And with this class of cases are the extensive soft tissue injuries with muscular tearing and extensive acidulation of blood in the tissues. Muscular training, exercises and massage are of tremendous value in the treatment of extremities and backs due to injury, disease, infantile paralysis, spastic conditions and disuse of habitual posture and occupation. It is difficult to outline the method used in these conditions as every case demands special consideration. These same methods of exercise, active and passive motion, and massage are of a vital help in the treatment of all other disabilities associated with pain that does not respond to ordinary corrective measures. The training and exercises instituted by one who understands this field with the help of stimulative measures and baking and massage, is a definite factor in relieving the aching and pain that go with certain cases of flat feet, pronated feet, acute strain, metatarsalgia and acute foot disturbances.

EDITOR'S NOTE—For additional data on the above subject, and particularly for information concerning the use of Diathermy (electrical heat), see *Diathermy in Dislocations*, by B. F. Green, M. D., on page two of this issue; also *Physiotherapy Treatment of Bone and Joint Injuries*, by R. W. Fouts, M. D., on page seventeen of FISCHER'S MAGAZINE for Nov., 1924.

For Physicians and Surgeons

Members of the Medical Profession who are interested in Diathermy will find the next regular Monthly Meeting and Clinic at 2335 Wabansia Avenue, Chicago, on Monday, April 13th, of special interest. Well-known speakers—actual demonstrations.

SEE BACK COVER PAGE FOR DETAILS



What Do You Do When a Growth Appears—

“Otherwise Inoperable”

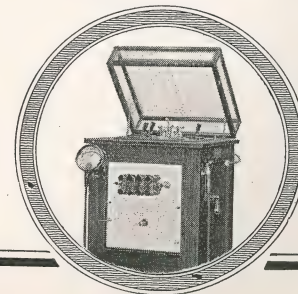
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A PAGE OF FUN

Mrs. Mutch: "I've been washing my diamonds all the morning in champagne. What do you do with yours when they're dirty?"

Mrs. Moore: "Throw 'em away."

□ □ □

"Wha' brand o' bacca are ye smokin', Jock?"

"I dinna ask him!"

□ □ □

"My God! You gave my wife arsenic instead of sleeping powder!"

"That's all right. You owe me 15 cents more."

□ □ □

This generation can drive automobiles, fly airplanes, talk by radio, and do many other things, but it is not quite so sure that it knows how to bring up children.

□ □ □

Paul: "Does your tooth still hurt?"

Albert: "I don't know."

Paul: "What do you mean by I don't know?"

Albert: "I left it at the dentist's."

□ □ □

Property Man (to villain): "Say, take those off. Those aren't your whiskers."

Villain: "What are they?"

Property Man: "They're one of the costumes for the Hawaiian chorus."

She had a vast amount of money, but it had come to her quite recently. One day an acquaintance asked her if she was fond of art.

"Fond of art!" she exclaimed. "Well, I should say I was! If I am ever in a city where there's an artery I never fail to visit it."

□ □ □

"I'm going to buy a dog."

"Bull?"

"No, really."

□ □ □

When we send things in a ship we call it a cargo and when we send them in a car we call it a shipment.

□ □ □

Jakie: "Ikey, you should put the curtains down when you kiss your wife. I saw you last night."

Ikey: "The joke's on you, Jakie. I wasn't home last night."

□ □ □



Prehistoric Surgeon: "Now, Miss Troglodyte, the anesthetic, please."

"THE LIGHTNING-SPARK OF IDEA, GENERATED IN ONE MIND, AWAKENS ITS EXPRESS LIKENESS IN ANOTHER MIND, IN A THOUSAND OTHER MINDS; AND ALL BLAZE TOGETHER IN COMBINED FIRE."

—THOMAS CARLYLE

Program for Our
**Monthly Physiotherapeutic
Meeting**

Monday, May 11th, 1925

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

"Surgical Diathermy in the Treatment of Malignancies." A comprehensive discussion of various types of malignancies, together with practical demonstrations of the details of technic 10:30 to 12:30 M.

A. R. HOLLENDER, M. D., Chicago, Illinois

"Influence of Unusually Large Doses of Ultraviolet Radiations on the Nasal Membrane." 1:30 to 2:30 P. M.

MAURICE H. COTTLE, M. D., Chicago, Illinois

"Difficult Hearing; A Report of Some Recent Studies in Its Treatment." 2:30 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.

Physicians and surgeons are cordially invited to attend throughout the session or during those periods covering subjects in which they are especially interested.

In addition to the lectures, each speaker will be glad to answer any questions in connection with your own physiotherapeutic problems.

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FISCHER'S MAGAZINE



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367

APRIL, 1925

TO REJOICE IN THE
PROSPERITY OF AN-
OTHER IS TO PAR-
TAKE OF IT.

—WILLIAM AUSTIN

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.

APRIL, 1925

No. 4

Prescribing Electricity

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



Medical electricity in whatever form available at the present moment becomes to the careful, thinking man a valuable agent in many of the cases presented to his attention. It becomes a thing to be deliberately and selectively used, in exactly the same way and with the same definite intention, that the medical man employs a certain drug. Medical electricity is a thing to be prescribed.

It is not a cure-all. It is not a fake. It is a deliberately selective means to an end. Let this ideal be erected in the minds of its users and then let it be preserved. Medical men should not give electrical treatments. They should prescribe electrical treatment and if equipped with the modality required to effect the desired end, they may administer their own prescription, by the aid of a technician, or if desired, it may be administered by themselves. This may seem an unnecessary distinction, yet it is far more consequential, not only in its effect upon the patient, but upon the medical man himself. There is, if one may use the term, a pharmacy of electricity as well as of drugs. Certain modalities produce certain physical reactions. They would be worse than useless if they did not. Hence it is the part of the user to learn these effects, how obtained, and in what need

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required, as surely as in his student days in college he familiarized himself with the action of recognized medications. Indeed, he will still find that even in the use of electrical entities he cannot dispense with the chemical equation, and he will happily learn that the electrical modality properly prescribed will accentuate, and accelerate the use of internal medication to a surprising extent.

What I wish, if—as the Englishman says—you know what I mean, is to get the users of electrical therapeutics, be they whatever type they may, to think! Let us approach the matter from the quiet, scientific standpoint, and not rush madly into unknown fields. Let us be ethical in this—that we use these new weapons of attack in an understanding fashion; that we use them so well that we establish them on a firm foundation of general recognition, and thereby become ethical indeed. The proof of the pudding is in the eating. Nothing speaks louder than results. A favorable result is an unassailable argument. The day is coming and coming fast when physiotherapy will win a general recognition, just because it is daily proving its worth. Calmly, quietly, and in a dignified manner, let us go forward, evaluating just what we have, employing it as scientifically as we may and as we ought without fear or favor, but with only one major end in view—the showing of benefit to those who need it by a calculated, understanding use of this newer means which is ours. Let us prescribe electricity in so intelligent a manner as to extend it far outside of any thought of contradiction and eventually prove our case, as prove it we will, since we are working with the TRUTH.

(From Jour. of Radiol., Feb., 1925)

Monthly Meeting, Monday, May 11th

You will find this a particularly interesting meeting, Doctor. Hear A. L. Yocom, Jr., M. D., discuss in detail the technic in treating malignant growths—with practical demonstrations.

See back cover page for full details

Sciatica

By MILES J. BREUER, M. D., Lincoln, Nebraska

The term, Sciatica, covers a multitude of clinical conditions differing in etiology, pathology, and treatment; it has a different meaning to every person that hears it. In discussing the applications of physiotherapy to this disease, the main part of the discussion must be taken up with diagnostic considerations; for a given technic may be very beneficial to one patient and fail utterly on another who apparently has exactly the same condition. The physiotherapist who considers technic only, will find himself blundering wildly and failing to get results most of the time; and will probably come to the conclusion that physiotherapy is not much good after all.

The reader is therefore advised to review the subject, after reading this sketch, in some standard text-book on neurology, such as Church and Petersen, or Jelliffe and White. If he does, he will find that these writers definitely recommend physiotherapeutic methods in their sections on the treatment of this condition.

We may first broadly divide sciatica into two portions: sciatic neuralgia, and sciatic neuritis. Theoretically there is no difference except in degree; but in cases termed neuralgia, the inflammation of nerve structures is so slight that pain is the only symptom. In the neuritis conditions, there will also be other physical findings of impaired nerve function. I will list them in the order of severity; the more severe the inflammation, the further down the list will the findings occur:

"Pressure points" of extreme tenderness, usually as follows: the sacro-iliac joint; the sciatic notch; and the head of the peroneus muscle.

Hyperesthesia of skin areas over the outer and posterior aspects of the leg and thigh.

Motor deficiency in muscles supplied by the sciatic nerve, which are the extensors of the leg and foot; the patient is unable to rise on his toes, drags his feet as he walks, and

has diminished or absent reflexes, including the patellar, plantar, and Achilles.

It would seem unnecessary to state that sciatica must be differentiated from sacro-iliac arthritis and from disease of the hip joint, were it not for the fact that the error is made frequently enough. Putting the sciatic nerve on a stretch by flexing the thigh and extending the leg will always produce pain in a sciatica; in hip joint disease, any movement of the hip joint (meaning an actual change in relative positions of femur and pelvis) will produce pain. Sacro-iliac arthritis may co-exist as the primary condition with a sciatica.

Let us first consider the functional sciaticas, in which it is absolutely useless to tinker locally with the sciatic nerve. Anemic conditions are a frequent etiology; in such cases treating the original cause eventually relieves the sciatic pain. Look for pernicious anemia, nephritis, endocrine disorders, malaria, syphilis, and intestinal parasites. Diathermy sometimes gives temporary relief; use a tin electrode over the sciatic notch and a cuff around the leg. Negative galvanism by the same method may also serve palliatively.

This temporary palliation is not even possible in another class of sciaticas, the reflex group. This is sometimes a very puzzling condition, and very frequently it defies all of our efforts at relief as well as at finding a cause. Diseases of the heart, lung, stomach, liver, kidney, ureter, bladder, intestine, uterus, ovaries, prostate, or testicles, may produce reflex pain in the sciatic nerve. The reader who is familiar with the mechanism of the production of Head's zones will understand this point, if he will in addition consider that these zones may overlap to a great extent by means of intercalated neurones. Even in these cases, it is worth while trying for palliative results with diathermy, high frequency sparks, or galvanism, and even actinic light reactions, upon the principle of counter-irritation. In considering this particular group, always think

of chronic constipation, which is a very frequent cause of sciatica.

Finally, as our last functional group, we have the sciaticas brought on by psychic and emotional causes. Many of these respond quite readily to physiotherapeutic methods, as might naturally be expected. These are the cases that leave their crutches at the shrines of all kinds of bunk healers. Yet, they are a very real problem in the hands of the physician; a problem to diagnose, and a problem to treat.

Now for conditions in which there is anatomical inflammation in the nerve. Arteriosclerosis is one of our frequent causes; the interference of blood supply to a nerve has very painful results, and is produced either by restriction of blood volume coming from larger vessels to the nerve; or by actual endarteritis of the endoneural artery. The relaxing effect of diathermy, with its augmented mobilization of blood is always beneficial in this condition.

Probably the vast majority of cases of sciatica are due to the direct action of toxins on the nerve tissue. We have the following groups of toxins: metals, as lead, arsenic, mercury, and copper; organic poisons, alcohol, tobacco, carbon monoxide; infections, as tonsillitis, typhoid fever, measles, gonorrhea, influenza, syphilis, and streptococcus; also fatigue and exposure to cold. Here, again, is an excellent opportunity to do a great deal of good by physiotherapeutic methods. Diathermy, with its increased blood supply, bringing reinforcements of leucocytes, opsonins, and other substances for biological defense, and increased nutrition, is the choice of all methods of treatment, physiotherapeutic or otherwise; the only thing at all of equal importance with it, is the eradication of the source of the toxin and the elimination of what toxin remains in the body. A block tin plate over the sciatic notch, and a half cuff around the leg below the lowest point of the pain is the technic; and as heavy a current should be given as the skin will stand. Take good care of the skin; if that is burned the treatment is interrupted, for the area of application is limited. During the

acute stages, the limb should be kept as nearly immobilized as is practically feasible. Negative galvanism is the second choice for treatment, but is very effective. A battery must be used; a mechanical source, because of the unsteadiness of the current is so painful and irritating that currents of sufficient strength to do any good cannot be used. Hydrotherapy, especially with hot packs, is also of limited application. In sciatic inflammations due to infection, salicylates should be used; the intravenous route being preferable as not interfering with appetite and digestion. Iodides, intravenously, should be used in all inflammatory cases.

In chronic cases, a great deal of patience is necessary; nerve tissue recovers very slowly. In case of severe nerve inflammation, where the nerve is destroyed, the nerve must regenerate from the nerve-cell body in the anterior horn, which requires from three to nine months. If reactions of degeneration appear, indicating that this has taken place, it is necessary to keep up the nutrition of the muscles in the interim by stimulating at the motor points with galvanic make-and-break shocks; for this a mechanical current source is excellently adapted.

Coming—The October Physiotherapy Meeting

Elaborate plans are already being laid for the big Physiotherapy Convention next fall. A long list of prominent physicians and surgeons will talk on subjects with which they are wholly familiar in everyday practise. Elaborate clinics and round table discussions will be a feature. It will be a meeting from which the practising physician may take home with him a wonderful fund of sound, up-to-the minute information for use in his own practise. Plan *now* for that week in Chicago, Doctor—it will be infinitely well worth while.

Watch for Further Announcements

Diathermy in the Treatment of Gonorrhoea

By WILLIAM S. EHRICH, M. D., F. A. C. S.,
Evansville, Indiana

The only really original device used in this work is the penis electrode. The experimental work was done with a double wrist electrode which was twisted into a shape approaching that desired. The tension of the spring is adjusted so as to slightly embarrass the circulation as well as to hold the penis firmly.

For the prostatic urethra we use the Monae-Lesser rectal electrode and for the perineum a simple cylinder or disc. With both of these is used a large lead foil opposite the electrode, placed on the abdomen in prostatic work and the sacrum in perineal.

The source of current may be any of the high frequency machines that will deliver 1500 milliamperes of smooth current.

In the penile application it takes about 900 to 1000 ma. to bring the temperature up to 110 degrees (108 degrees has been found to kill the gonococcus instantly) and then reduce the current to between 800 and 900 ma., which holds it well above 108 degrees for about 15 minutes. We do not pay as much attention to the meter as we do to the thermometer since the thickness of the organ and other elements cause a difference in resistance which requires more or less current to obtain the same amount of heat. We use the ordinary rectal thermometer inserted into the urethra.

In acute gonorrhoea the results at times have been startling. In the beginning of our work we found that there were recurrences in several cases. We then extended the time of the exposure and found that by using 110 degrees for 30 to 40 minutes sterilization was accomplished. The external parts were very carefully sterilized with alcohol

and cyanide of mercury to prevent reinfection. It is not at all uncommon to see a case which shows a heavy purulent discharge, which is laden with gonococci, after 24 hours change to a mucous discharge in which leucocytes, some epithelial cells, but no gonococci are present. In these cases we always give a few more exposures to insure against any organism which might still have enough vitality to give trouble. A mild, slightly astringent lotion will take care of the remaining inflammation, which, however, may persist for several weeks.

As representative of this type we report the following case:

S. F., age 28. Occupation, clerical work. Complaint, urethral discharge of one day's duration; first infection. Examination revealed a purulent discharge laden with Gram negative diplococci. First urine cloudy, second clear. Exposed to 110 degrees for 40 minutes. Following day showed a heavy mucous discharge containing no gonococci. Again exposed for 30 minutes to 110 degrees. Fourth day showed a very slight mucous discharge. Exposed to 110 degrees for 30 minutes. Sixth day both urines clear with a few mucous shreds in first. We believe that it is in this stage of the disease that diathermy will accomplish the most good.

In subacute stage as in the chronic the treatment is more difficult. Not only is the penile electrode used but heat is applied to the bulbous urethra by means of the electrode on the perineum with a large pad over the sacrum or lower abdomen. Should there be any evidence of prostatic infection that portion of the tract is also heated.

W. F. reported May 22nd. Suffering from acute gonorrhea. He was treated until July 5th with injections of lunosol alternating with mercuriophen, internal urinary antiseptics, etc. At this time both urines were cloudy and there was considerable mucopurulent discharge containing large numbers of gonococci. After four exposures to heat there was still a mucous discharge with some pus cells but no organisms. The prostate was then massaged and the

vesicles were stripped and a large amount of secretion expressed. This was repeated three times and the patient discharged August 10th, apparently normal.

Those cases in the chronic stage take longer to treat but the results seem to justify the procedure. The reason probably that we have not gotten quicker results was that we had to feel our way in applying heat to the rectal mucosa since we had no desire to burn this tissue and consequently, I feel sure, did not apply sufficient heat nor did we give enough time to the exposure to get the best effect. Right here I want to mention that diathermy alone will not cure all cases of urethritis even though the patient may be sterilized of the gonococcus. The secondary lesions such as infiltrations, prostatic pathology, etc., must be given appropriate and sufficient treatment.

L. W. reported for treatment October 9, 1923, suffering from a gonorrhea of over a year's duration. There was a slight discharge containing Gram negative diplococci as well as staphylococci and a Gram positive diplococcus. Every conceivable method of treatment was used to clear up this infection, which invariably returned a few days after treatment was discontinued. He was heated six times when the discharge ceased and the urine began to clear of shreds. After six more treatments there is only a very small light shred in a perfectly clear urine. Centrifugal specimens of the urine show an occasional leucocyte but no organisms. This patient has not been treated during the last three weeks but is required to report once weekly for examination, which has always been negative.

In epididymitis our results coincide with those of Dr. Corbus, which were recently published in the Journal of Urology. All pain is relieved by the first treatment and after two or three the scrotal contents become normal. There seems to be much less permanent enlargement of the poles than after any other treatment.

Y. H., suffering from a subacute gonorrhea, developed an epididymitis and when he entered our service the organ was about twice the normal size and painful in the extreme.

He had used hot applications and all the other orthodox remedies. The first application of diathermy relieved his pain to the extent that he was able to go to his office and after the fourth treatment he was practically normal so far as his epididymitis was concerned.

Some cases take a longer time to sterilize than others under similar conditions. So far we have failed to find the reason. It is interesting, however, to observe the smears in cases of mixed infections where after a few heatings the gonococcus disappears, leaving the other organisms, which are more resistant to heat.

There is always a discharge of mucous for some time after the case is sterilized and I suspect it is due to the oversecretion of the glands caused by the stimulation from the heat.

We have found that it takes a shorter time to recover if we use a very mild injection of some of the organic silver salts accompanying the heat. It would seem that this takes care of any organisms which may have been outside of the zone of intensity of the heat and have been stunned rather than killed by it.

None of our cases have suffered from cordee or any other pain after the first treatment.

In closing I wish to express my thanks to Dr. Minor Miller of the U. S. P. H. Service for his assistance in this work.

(Reprinted from Urol. and Cut. Rev., Nov., 1924)

An Interesting Meeting and Clinic for Physicians and Surgeons

Members of the Medical Profession who are interested in Diathermy will find the next regular Monthly Meeting and Clinic at 2335 Wabansia Avenue, Chicago, on Monday, May 11th, of special interest. Well-known speakers—actual demonstrations.

See Back Cover for Program

Uterine Subinvolution

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

In my last article I spoke of the treatment of Uterine Fibromata by the use of the galvanic current. In this I want to take up another condition of the female pelvic organs, which is very common, and apt to prove more or less unsatisfactory in its treatment by ordinary methods, yet one which when properly attacked by galvanism will respond readily and in a surprisingly short time.

I refer to the condition known as subinvolution, with or without resulting displacement of the organ. Because regardless of displacement either one or both conditions can be relieved, unless the uterus is actually bound down in its abnormal position. This is a statement I have proved.

In subinvolution, two things are mainly to be considered. And galvanism applies directly to each. In the first place the organ is enlarged, due to a relaxed condition of its musculature. The muscle is flabby, the organ boggy and lacking in all tone. I have seen them as flaccid as an old glove. Secondly, the circulation is disturbed, there is a passive state of the blood stream—a stagnation or partial stasis, which is exactly what one would expect in a condition where the muscle condition has robbed the circulatory channels of its normal support.

Remember what I have said about the galvanic current. It is unidirectional, with a definite polarity, each pole being capable of producing constantly similar effects. Now—recall the action of the positive pole. It is haemostatic, it contracts blood vessels. It allays irritation, checks inflammation, hardens and contracts tissues. You have a relaxed organ with flabby walls, a lack of tone in muscle, a lack of tone in blood vessels, a disturbed circulation. This organ needs toning up. How shall it be brought about? Let's try it the way I've been doing it for years.

Place your indifferent electrode (the negative in this case) over the abdomen, or if you prefer, the lumbar back. Use a speculum to expose the uterine os. Take the active (positive) pole and let it be either a slender silver, ball tipped

wire electrode, or a small copper intra-uterine electrode. Insert it gently. If it doesn't go in readily, though it usually will, turn on ten milliamperes of negative current, by using your pole changer—until it does. Once it is in place give ten, twenty, thirty milliamperes positive to the intra-uterine canal for twenty minutes. Regulate the current to your patient's comfort at first. They'll take more later as they get used to it. After the treatment, slip out the sound. It may stick. If you are using a copper sound, it almost certainly will, but a slow, gentle traction will bring it out. A few drops of blood may come with it. No matter. After a few treatments this will stop. And here is what will happen. This uterus will contract, grow smaller, approach normal measurements from day to day. It will gain tone. And as it does this if displaced it will gradually come back to position unless otherwise affected by some past trauma, which has resulted in distortion rather than displacement. If you don't believe this, try it for yourselves.

This is the simplest technic. We may vary it. If you have a machine giving you both galvanic and sine currents, it is a good thing and one which will quicken results, to administer a slow sine wave to the uterus, after the direct positive has been shut off. Leave your uterine pole in place. Switch your indifferent pad to the back or if using this technic, place it there first. Then for say ten minutes, give this slow sine, and stop. By the addition of this modality to the galvanic current, you get not only the chemical effect of the positive polarity, but the added advantage to both muscle and circulation of an actual passive motion, a cellular massage. This aids return to tone very greatly, though either technic has given splendid results in my experience. Try it. You'll be gratified and your patients will be pleased. It's really amazing how many women are carrying around a subinvolved uterus, and I do not hesitate to say that every woman should be checked up post partum to see that such a condition does not exist. If we don't check them up we are not doing our full duty to our patients.

New Schedule of Waggoner Physiotherapeutic Clinics and Lecture Courses

By Mel R. Waggoner, M. D.
Cedar Rapids, Iowa

Doctors who are keeping pace with the development of physiotherapy will find these lectures and clinics a most valuable source of new information and up-to-date practices.

Classes for the Coming Season Follow:

Memphis, Tennessee	- - - - -	April 6th to 11th
	(Chisca Hotel)	
New Orleans, Louisiana	- - - - -	April 13th to 18th
	(Roosevelt Hotel)	
Dallas, Texas	- - - - -	April 20th to 25th
	(Adolphus Hotel)	
Monroe, Louisiana	- - - - -	April 27th to May 2nd
	(Hotel Monroe)	
Indianapolis, Indiana	- - - - -	May 11th to 16th
	(Claypool Hotel)	
Detroit, Michigan	- - - - -	May 18th to 23rd
	(Wolverine Hotel)	
Pittsburgh, Pennsylvania	- - - - -	May 25th to 30th
	(Wm. Penn Hotel)	

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Chicago, Illinois

A Method for Diathermy to the Middle Ear

By MILES J. BREUER, M. D., Lincoln, Nebraska

At the Physiotherapeutic meeting last fall, there was a great deal of favorable comment upon the beneficial effects of diathermy on chronic middle ear inflammation with deafness and tinnitus. On the whole, various workers seemed to agree that in many cases, when the treatment was continued long enough, marked improvement in symptoms was noted. But, there was a great deal of discussion as to the method of applying this treatment, and a great deal of disagreement on this point. Some were using metal wire wrapped with moistened cotton and inserted into the external canal; others used the fingers of the patient, with electrodes held in the hands.

Both of these methods have their objections. The little finger is a poor conductor, as it consists mainly of bone; and half of its contact surface with the skin of the ear canal, is finger-nail, which is no conductor at all. There is an unpleasant heating before a sufficient amount of current can be passed to have a desirable effect on the middle ear. The wet cotton method, I think personally, is a very bad procedure; wet electrodes should never be used in applying diathermy. As they become warm, evaporation takes place, resistance is increased, and burns may result, either from steam, or from high local resistance; in any event, the current constantly decreases in volume during the treatment.

It occurred to me that if this treatment is given at all, it must be given over a long time; and therefore it would pay to make special electrodes to fit the ears of each patient, and thereby obtain accurate metal-to-skin contact over a large area of the auditory meatus. The following technic was devised; it is not difficult to carry out for anyone who has ordinary everyday laboratory or mechanical ability.

Soften a piece of paraffin wax as big as the end of your finger in warm water (or, I used an ordinary bacteriological incubator which we have in the laboratory). Mold this roughly into the form which will fit the external meatus, and then force it into the patient's ear canal, using a good deal of pressure, so that an accurate cast of the canal is obtained. Allow it to remain for a few minutes, whereupon it will harden sufficiently so that it can be removed without distorting its shape. Harden further in cold water.

From this, a plaster-of-Paris mould is made. Get your dentist friend to show you how to mix the plaster properly; in this day of prepared plaster bandages, physicians have lost the art of working plaster. Fill a small pasteboard box, such as is used for powders or pills, with plaster of such a consistency that it will just barely flow out of one vessel into another. Force the paraffin casts into it, smaller end downward, and leave for a half an hour to solidify. When the plaster has become solid, the paraffin cast is readily pulled out. The plaster mould must be allowed to dry thoroughly, which process is hastened by leaving it over night in a warm place (I use my 50 deg. incubator, which we have for paraffin embedding of tissues).

The next day, melt up a piece of block tin in an old tablespoon, over a gas stove or a bunsen burner or a blow-torch, and pour into the mould. Before it solidifies,



Special headsets for diathermy treatments.

insert a wire, the end of which has previously been tinned with solder, i. e., apply soldering paste or zinc chloride solution, heat the wire, and rub it on a piece of solder until the end is bright and shiny with melted solder. Hold this wire in place, vertically, until the tin has solidified; it then forms a handle by which the electrode is clamped in position, and to which the connecting cords can be fastened. When cool, the electrode is removed, and smoothed off with a piece of steel wool.

For the treatment, the electrode is lathered with soap, in the same manner as other block tin electrodes, and inserted into the ear. It is best held in place by one of the "head sets" devised for this purpose, similar to radio telephone head sets; I obtained mine from the Fischer Company.

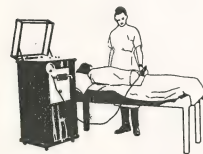
For some time, I heeded warnings that I had heard, and treated only one ear at a time to begin with, lest some damage be done, by the treatment. But, I have never seen any damage done, and cannot conceive how any could be done; and now I am letting them have it in both ears at once; the diathermy is passed straight through the head between the two ears. The only effect I have ever noted from it in an unfavorable sense, was a vertigo, which passed off in a few minutes after the cessation of treatment.

Currents must be small; I have occasionally given as much as 200 m.a., but usually it is a fraction of that. A small diathermy apparatus is required, or the step-down apparatus may be used in connection with the larger models. It is quite safe to give the patient as much current as he can comfortably stand; but do not permit it to cause any burning sensation. Treatments are best given daily, for 20 to 30 minutes.

I have obtained some highly gratifying results with this method, by persisting long enough, on patients who have been given gloomy prognoses by other physicians.

Physiotherapy in Pulmonary Tuberculosis

By MILES J. BREUER, M.D., Lincoln, Nebraska



Tuberculosis is the chronic disease *par excellence*. The bacillus grows slowly; where you can raise a rich culture of another organism over night, the tubercle bacillus requires three months to produce a visible growth; where a lesion due to another organism will develop and heal within days or weeks, tuberculous lesions require months and years to develop. From the time that the lesion in the apex begins as a mere microscopic speck until the time when it is developed so plainly that you can diagnose it across the street, years elapse during which there is pathology present, which can be diagnosed by the man who knows how.

Here is where the physiotherapist can get in his effective work. If he can recognize the pulmonary lesion early, when it consists of an area of infiltration with lymph and small-round-cells, he can do wonders with it, because he has very powerful means at his disposal for handling it. The diagnosis of tuberculosis at this stage has been vastly refined and perfected during late years.

For increasing the circulation of blood in this area, diathermy stands out as the main method. A fresh, active rapidly moving supply of blood is the only real "specific" for tuberculosis; and this can be secured with diathermy, which dilates the capillaries in the particular spot that is being treated, and nowhere else. The high degree of heat produced is unfavorable to the existence of the tubercle bacillus, and is very favorable to the biochemical processes that the body undertakes in order to repel the invaders. We are producing locally the high temperature, which Nature in her efforts to fight the infection, is compelled to produce in the whole body. A close second of diathermy is the infra-red light, whose effects are very similar. The effects of galvanic and sinusoidal currents are less widely known, but there is much evidence to support the idea that they can stimulate constructive metabolism. The surging sinusoidal wave can

certainly stimulate the movements of the affected portion, and promote blood, lymph, and air circulation. Mechanical vibration, with the proper technique, by stimulating nerve cell bodies, can do a great deal in the same direction.

However, if the disease has been permitted to reach a more advanced stage, the story is very different. The infiltrated area has become so large that its center cannot be kept alive, and breaks down. There is necrosis, with destruction of lung tissue; there is a very large mass of active bacilli and of dead protein material and accumulated toxic products of bacterial action. If we begin stirring this about, and sending increased amounts of blood through it, we produce an extensive increase in the absorption of toxic materials and flood the body with them. Lack of caution in the treatment of advanced cases with physical means often makes them worse, and permanently alters the prognosis. With the increased metabolism brought about by heat and extra circulation, the first thing that happens will be more tissue destruction; and if a blood-vessel happens to lie in the path of this, the result might be a serious hemorrhage. In an advanced case, while the indications are much the same, they must be carried out with extreme caution. A severely diseased part needs rest rather than exercise or movement, and sedative rather than stimulative measures. The increased nutrition provided by diathermy and infra-red light is just as valuable here, but must be applied very gradually and carefully.

The above is a brief statement of the general principles underlying the treatment by physical methods of the primary pathology in pulmonary tuberculosis. In addition, it is necessary to consider secondary and associated pathology. Among the latter, the most important is the restriction of abdominal movement, with its tremendous train of consequences. Just as the abdomen is rigid over a peritonitis, or the muscles are rigid about an inflamed joint, so there is a spasm of the muscles whose nerve supply comes from the spinal segments which receive the afferent impulses from the lungs. These are the muscles of the shoulder-girdle, the diaphragm, and the muscles of the abdominal wall. The maintenance of the abdominal circulation depends on the mechanical movements of the contents

caused by the action of the diaphragm and the abdominal wall. When this movement is restricted, the resulting vascular stasis affects practically every organ in the abdomen. That is why the tuberculous patient is such a terrible bunch of symptoms; that is why he doesn't eat, and is constipated, and has low blood pressure and poor elimination through bowels and kidneys, and tympanites and hemorrhoids, and abdominal or epigastric pains, with the addition of pelvic symptoms in women.

For the relief of the underlying condition, we have the sinusoidal wave to supply movement to the abdominal contents and tone to its muscles, for which the respiratory rate is appropriate; and for the relief of the intestinal atony, the intestinal rate is better suited. To assist in the elimination of toxins, autocondensation, preceded by copious draughts of water; hydrotherapy, to open the pores and stimulate peripheral circulation. For stimulating a rise of blood pressure, high-frequency sparks or vibration along the spine and over the solar plexus are effective, and will contribute markedly to the patient's feeling of well-being.

Sinus affections are frequently associated with pulmonary tuberculosis. Their treatment also may derive material aid from physiotherapy, but is of a specialized nature that is out of place in this discussion. The same may be said of hemorrhoids.

In this disease, as in many others, the necessity of treating symptoms frequently arises. The most frequent of these is pain, usually in the chest or back. Vibration, high-frequency sparks, high-frequency discharge, radiant heat and light, negative galvanism, and diathermy, are all useful, on the principle of counter-irritation. No rule can be set down as to which is most applicable in a given case. The dry reflex cough is also often troublesome, and will in most cases yield to the above measures, generally on the principle of counter-irritation. Headache, if toxic, calls for elimination by autocondensation and deep radiant heat and light; tympanites will yield to the sinusoidal wave and to vibration.

Bear in mind that one of the chief values of physiotherapy in tuberculosis is that it presents to the untrained eye, the ex-

ternal evidence of something being actually done for the patient. The old routine treatment of tuberculosis looks to the layman too much like doing nothing; and there is no detrimental factor so potent in delaying recovery as discouragement. Even if physiotherapy accomplished little that is fundamentally different in a material way from the results of the old methods (though I am by no means ready to admit that), still, the hope with which the patient becomes filled when he sees that something is being done for him and with him, is in many cases the deciding factor which swings a dubious prognosis from the dark side to the bright.

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CHICAGO

Diathermy to the Heart

By GUSTAV KOLISCHER, M. D.

Chicago, Ill.

The heart is the most important organ in the regulation of the blood supply. Shooting pains, fainting spells and all these symptoms are due to an insufficient blood supply of the heart. The nerve centers that regulate the heart action are located between the ventricles and the auricles. If on account of the calcification of the coronary arteries the blood supply of the nerve centers located between the ventricles and the auricles becomes lower, then an attack will occur because the nerve centers are reduced in blood supply.

If heat produced by a high frequency current is applied, the femoral arteries become dilated and the patient will get over the attack. This dilatation will persist for quite a while after the treatment but after a while the treatment must be repeated. While it is not a cure—we cannot change the arteries—we relieve the patient for a long time of all these dangerous symptoms. The arteries of the heart are dilated so it is important not to overdo this treatment. We follow these rules: In the first place any time that either the abdominal or pectoral cavity is treated the diameter of the electrodes should correspond with the depth of the chest or belly. The sphere put on the chest and back should have the same diameter as the chest from the front to the back. Place the electrodes over the heart and begin slowly with the current and never raise it beyond 100 ma. One gets all the good results with no excessive amount of the current. The proof of this is that after the treatment is over the patient will say he feels fine. If it is overdone the heart is over-stimulated and the patient will become restless and produce a cold perspiration.

These treatments should not be given oftener than twice a week. Test your patient in each case. If you have to deal with a nervous individual go slowly, with a robust individual you can go faster. The main thing is not to do too much. It is remarkable what can be accomplished in these cases.

(Reprinted from Journal of Radiology)

The High Frequency Current

By ALBERT C. GEYSER M. D.

New York City

Of all the electric modalities so far invented for therapeutic purposes the high frequency current is the most interesting. This is so because this current produces absolutely nothing but results which are in harmony with the laws of physiology. Its name is derived from the fact that its alternations mount up into the million per second, just stop to ponder for a moment, "one million alternations per second". That is some speed, yet, is it any real speed as perhaps compared to the speed with which the individual ions move throughout this universe? The scope of this paper does not permit of further speculation.

We recall that the galvanic current caused electrolysis whenever it was passed through a decomposable substance including the human tissues. To separate ions (electrolysis) requires only 1/60,000 part of a second. If during this short space of time the galvanic current is applied to living tissue, it causes tissue decomposition. If attempts at tissue contraction follow each other at greater frequencies than 5000 per second, the tissues are unable to respond and they remain flaccid.

From this we may reason that the high frequency current with 1,000,000 alternations per second cannot cause electrolysis; neither can it produce tissue contraction. Since the high frequency current flows in one direction for only 1/1,000,000 part of a second it causes a stress or strain to be set up within each atom whereby the corpuscles and the ions are pulled apart, then forcibly driven together again. Because of this inter-ionic friction thus produced, according to the laws of physics "All arrested motion results in heat." This is one of many reasons why electrolysis does not take place in tissue when the high frequency current is passed.

Tissue contraction and relaxation require time, at least 1/5000 part of a second. When the impulses exceed this time, the tissue not only fails to be influenced by it, but is affected in the other extreme, it becomes completely relaxed, flaccid. These

two qualities furnish us with the cue as to the therapeutic possibilities; development of internal heat through interionic friction and complete relaxation or flaccidity. Both of these factors are physiological necessities at all times, but especially so during disease processes, acute or chronic.

What disease process is not accompanied or even maintained by capillary spasm, stasis, congestion or anemia?

The principal tissue metamorphosis takes place in the capillaries. If the capillaries are in a state of spasm neither oxidation nor diapedesis can occur; without these, recovery is impossible.

Pain, in every instance, is due to one of two or both conditions, pressure or irritation.

Spasm, muscular or capillary, is pressure, toxic association with sensory nerve cells means irritation. Interionic friction will assist nerve cells in dissociating toxins, flaccidity or capillary dilatation favors diapedesis, leucocytosis and oxidation. Neither the high frequency current nor any other therapeutic modality should be employed with the object of curing a disease.

All modalities are therapeutically indicated as they are capable of calling into action *physiological responses* with the least damage to the rest of the general economy.

While the galvanic, faradic and "sinusoidal" current have their specific indications, the high frequency current is almost universal in its applicability.

The high frequency current is used therapeutically in two forms, the autocondensation and the diathermia method.

Whenever possible it is well to employ a special apparatus for special work.

The auto-condensation method requires an auto-condensation chair, couch or other device suitable for the purpose.

The patient is connected to one pole of the machine while the other pole is attached to a large sheet of metal over which is placed either hard rubber, fiber or a hair mattress in such a manner that the patient's body cannot come into direct metallic contact with this pole. Since the patient is connected directly to only one pole of the machine, the current is obliged to pass

through the insulating material before it can saturate the patient. To make this possible we require a current of comparatively high voltage such as is given here.

Such a current is known as a current with high voltage and damped oscillations. When the patient is connected to one pole of such a current, the entire body acts as a capacity while the large metal sheet represents another capacity. Since these two capacities, the patient's body and the sheet of metal, are separated by a non-conductor, a stress or strain is set up in each of them. This stress "irritates" the ionic equilibrium, causing heating of the entire body with increased oxidation, increased metabolism, and increased output of urea.

These physiological results are indicated in every disease where general constitutional effects are desirable. In cardiovascular disease where high-blood pressure is a marked symptom this current is a real physiological specific.

(From *Am. Physician*, Jan., 1925)

The New Small Size Chapman Vaginal Electrode



To meet the need, which the physician occasionally encounters, for a smaller vaginal electrode, we are now supplying the Chapman Vaginal Electrode in a new small size. The shank is $1\frac{1}{8}$ -in. in diameter, the cervical bowl is $1\frac{7}{8}$ -in. wide and $\frac{5}{16}$ -in. thick. Handle is of hard rubber. Price, complete with thermometer, \$12.00; electrode only, without thermometer, \$6.50.

The Regulation Size Chapman Vaginal Electrode is supplied with shank $1\frac{3}{8}$ inches in diameter, and with cervical bowl $1\frac{3}{4}$ inches wide and $\frac{3}{8}$ inch thick. Handle of hard rubber. Price, complete with thermometer, \$12.00; without thermometer, \$6.50.

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Diathermy In Knee Joint Injuries

By CHARLES R. BROOKE, M. D.

Chief, Physiotherapy Clinic, U. S. Veterans' Bureau
New York City

The cross-fire method of diathermizing joints is used by the writer with justifying success, this being found to be of particular value in knee joint injuries. The exact technique of the method is carried out by the sequence of four different applications of the electrodes as follows:

The first treatment is given by the cuff method, cuff electrodes being placed around the leg just below the patella ligament and around the thigh just above the knee joint. The second application is carried out by placing plate electrodes above and below the knee diagonally opposite each other. The third treatment is given by reversing the electrodes, and in the fourth and last application, the electrodes are placed one over the knee cap and the other in the popliteal space. Duration of each application and treatment is twenty minutes, given singly or combined and repeated as often as indicated.

It must always be remembered, in the application of electrodes for diathermy, that the smaller active electrode is placed over the site of greatest disability with the larger or inactive electrode diametrically opposite. This plan brings the involved area between them always with their edges far enough apart to prevent arcing of current between the electrodes. Diathermy should be followed by either massage and exercise, sinusoidal wave, rhythmic faradism or the combination of static wave, sparks and brush discharge. The combination of diathermy with any of the above modalities hastens absorption, decongests the tissues, relieves pain and promotes a physiological reaction which hastens the return of tissues to normal condition and the joints to normal function. The duration of treatment may range from twenty to thirty minutes up to tolerance of the host. Diathermy is contraindicated where there is walled-in pus, liability to hemorrhage, acute tuberculous disease of bones and joints, malignancy and improperly reduced fractures and dislocations.

(Reprinted from *The American Journal of Physical Therapy* September, 1924)

Treatment of Gonococcal Vesiculitis by Diathermia

By DOCTEUR M. E. ROUCAYROL

Paris, France

The invasion of the seminal vesicle is a frequent occurrence in the course of a blenorragia, either spontaneously, or as a result of badly performed injections or lavages.

The acute stage, with painful symptoms and polyuria, is only transitory. It often gives the appearance of yielding to mild medical treatment, but in reality the gonococcus subsists in the vesicle. If at times it indicates its presence by a "drop," or by a more or less cloudy urine, there are, on the other hand, cases where only the presence of a gonococcal infection in the woman leads us to make a spermoculture of the husband, which gives us the solution to the problem.

I have treated by my method of diathermia a certain number of cases of vesiculitis which have resisted other measures. It is necessary to heat for 20 minutes to a temperature of 45 degrees C. If the patient bears the urethral electrode badly, on account of its making him want to urinate, recourse can be had to a rectal electrode, which is very well tolerated in all cases.

I give here some specimen case-reports of patients who had either vesicular lesions perceptible to the touch, or simply gonococci in the spermocultures:

Case 1. 106/24. Man, aged 28. Patient treated in 1920 for chronic urethritis, by dilatation. At that period examination of the sediment of centrifuged urine gave negative results. In 1924 the patient, wishing to marry, returned to ask advice. On examination, the urethra was found to be sound, and the urine absolutely clear, with no trace of pus. Spermocultures gave gonococcus positive.

Treatment: 8 daily seances of diathermia at 45 deg. Spermoculture negative.

Case 2. L95/24. Male, aged 30. Patient of Dr. Mourlon. Treating his wife for a gonococcal metritis, I examined him and could find no urethral lesion; urine clear and without pus; no urinary history. Spermoculture, gonococcus positive.

Treatment: 4 diathermias of 20 minutes at 45 deg. Spermoculture negative.

Case 3. PM61/23. Male, aged 30. Acute vesiculitis, with terminal hematuria. Gonococcus in the discharge.

Treatment: 7 diathermias of 20 minutes at 45 deg. No more "drop." Urine clear. Spermoculture negative.

Case 4. D79/24. Male, aged 26. Infection dating back 5 years. Gonococcal prostatourethro-vesiculitis. Formerly treated by vaccines, and dilatations.

Treatment: 5 diathermias. Urine clear, without pus. Spermoculture negative.

Diathermia, then, may be of service and is justified in an affection as tenacious and as dangerous from the social point of view as vesiculitis, after it has resisted all other measures.

(From *Am. Jour. of Phys. Ther., Nov., 1925*)

The Imel Course in Physiotherapy

To Mid-Western physicians and surgeons who are interested in Physiotherapy, Edward S. Imel, M. D., offers a complete one-week course of instruction and discussion. Schedule for the courses is as follows:

Waterloo, Iowa	April 6th to 10th
(Ellis Hotel)	
Tulsa, Oklahoma	April 13th to 17th
(Wells Hotel)	
Oklahoma City, Oklahoma	April 27th to May 1st
(Huckins Hotel)	
Topeka, Kansas	May 4th to 8th
(National Hotel)	
Des Moines, Iowa	May 11th to 15th
(561 Seventh St.)	
Sioux Fall, South Dakota	May 18th to 22nd
(Carpenter Hotel)	

Physicians and surgeons interested in the courses are invited to address request for full information as to fee, detail of course, etc., to
MAGNUSON X-RAY COMPANY, 1118 Farnam Street, Omaha, Neb.

Diathermic Treatment of Malignancies

By GRANT E. WARD, M. D., Baltimore Md.

The essential feature of success in the use of electrodesiccation and electrocoagulation is the development of accurate judgment as to the extent of the disease, and a thorough knowledge of the current being used and the extent of the after-slough with the chosen current. This is attained only by practice.

The technic in itself is quite simple. In large tumors a general anesthetic, such as gas or ether, is preferable. In case ether is used, it must be removed from the room for at least a minute before the current is turned on. If this precaution is observed carefully, there is no danger of explosion, even when working about the head or oral cavity. The hypodermic administration of scopolamin, 1/150 grain, morphin, $\frac{1}{4}$ grain, and atropin, 1/150 grain, alone or prior to anesthetic, is of great assistance. These drugs may also be used with local or regional anesthetic. In smaller epitheliomas and in benign growths, local injection of a 1 per cent solution of procain is satisfactory.

The older workers used disk or flat metal applicators for the active electrodes, the size to suit that of the lesion to be treated. Doyen employed olivary, cylindric and semi-insulated applicators for work in cavities such as the cervix and rectum. These various forms have been generally discarded, the ordinary needle being adopted for surface treatments, vaginal, cystoscopic, rectal and oral cases being treated with needles of varying lengths and shapes, carrying rubber insulation to within a half inch from the tip. The inactive electrode consists of a large moist pad about 8 by 12 inches, placed under the back or buttocks of the patient. The construction of this pad is simple but important. The wire leading from the electrical machine is attached to a piece of thin sheet copper or heavy wire mesh. The latter is preferable, as it molds to the irregular surfaces of the body more readily. This is essential, for, if any portion of the pad is closer to the skin than another, a spark and consequent skin burn will result. One should remember, there-

fore, to have the current evenly distributed throughout the inactive electrode, thereby spreading it and avoiding such a burn. The metal parts of the pad are covered with several layers of gauze or, better, asbestos paper, which in turn is covered by linen cloth, the back being insulated from the operating table by sheet rubber. The entire pad is then moistened and placed in a moistened linen pillow case, which can be changed between patients.

Before the needle is applied, the strength and quality of the current are tested on a piece of metal. When the desired quality is obtained, the needle is inserted into the tissue and the current turned on, it being varied a little to meet the needs of the individual case. In treating large areas of disease, one should always begin by throwing a line of coagulation around and beneath them where possible so as to cut off lymph and blood drainage from the part. This is given great emphasis by Clark and Wyeth and is most important. Tissue can now be removed for diagnosis with safety. The entire tumor is next thoroughly coagulated and removed as a mass of dead debris. It is not good technic to carbonize the tissues. This can be avoided by moving the needle from place to place.

Overtreatment must be continually guarded against, for destruction of tissue goes far beyond the area of white coagulation. With a strong bipolar current, there is coagulation from all sides and point of the needle for from 0.5 to 1 cm.; but in a few days death of the cells beyond this point occurs. This unprecedented deep penetrating effect of electrocoagulation must be borne in mind in treating growth near vital structures or large blood vessels. I have seen, for example, a case of extensive posterior tongue cancer develop a profuse secondary hemorrhage, in spite of a preliminary ligation of the lingual artery.

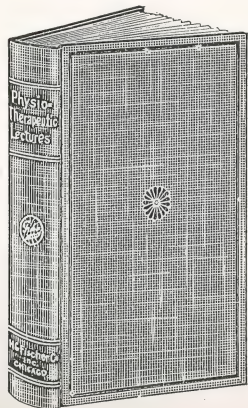
It is important to emphasize the use of the microscope in checking up the results of the treatment. In case the trouble is not eradicated by the first treatment, a second or third may be carried out with no fear of causing a slowly healing, painful burn in the normal tissue, as in repeated irradiation of skin lesions with the roentgen ray or radium. It is comparatively

simple to take a bit of suspicious granulation tissue with some variety of tissue clippers and have a frozen section made, confirming the diagnosis. If disease is present, it then remains to destroy the small areas of active trouble under local anesthesia.

In the case of small and superficial growths, all that is necessary is to insert the needle, turn on the current and, when the disease is white, stop the treatment. With this type of case, healing is assured in from two to four weeks, depending naturally on the size and depth of the lesion. With large cancers, plastic operations are of great help in hastening a good cosmetic result. A great advantage of this method over roentgen ray and radium is seen in the rapidity with which healthy granulations spring up after the slough has been removed, giving a splendid surface for skin grafting. There is none of the slowly healing, indolent ulceration so frequent with radiation therapy.

(From Journal A. M. A., Feb. 28, 1925)

The Book of Physiotherapeutic Lectures



Reports of Lectures and Clinics given at the Third Annual Physiotherapeutic Meeting held at Logan Square Masonic Temple, October 20th to 24th, 1924. Some 700 pages of Diathermy, Quartz Light, X-ray. Limited edition of 1,500 will soon be exhausted. If interested, send your reservation at once. Price, \$9.00.

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A PAGE OF FUN

She: If wishes came true what would be your first?

He: I would wish—ah, if only I dared tell you.

She: Go on, go on. What do you think I brought up wishing for?—Jack O'Lantern.

□ □ □

Head of the House (in angry tones): Who told you to put that paper on the wall?

Decorator: Your wife, sir.

"Pretty, isn't it?"—The Congregationalist (Boston).

□ □ □

Caller: Your children play so quietly.

Mother: Excuse me a moment.

□ □ □

"I told my wife that if she bobbed her hair I would leave her."

"But she bobbed it; and you're still living with her?"

"You bet I am. I'll show her she can't bluff me."

The child came to his mother in tears.

"Oh, mama," he confessed, "I broke a tile in the hearth."

"Never mind, dear," the mother consoled. "But how ever did you come to do it?"

"I was pounding it with father's watch."—Tit-Bits.

□ □ □

He: When you are in the wrong you never acknowledge it."

She: Yes, I do, but I never am in the wrong."—Ocean Times.

"I saw the doctor you told me to see."

"Did you tell him I sent you?"

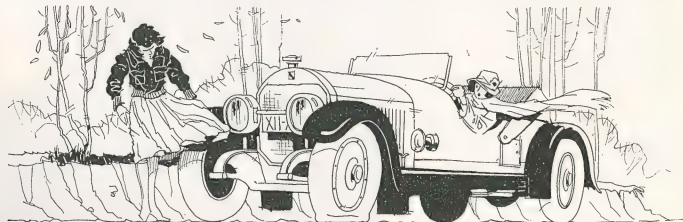
"Yes."

"What did he say?"

"He asked me to pay in advance."—Pearson's.

□ □ □

Something's gone wrong with my right arm, doctor. Yesterday I could lift it as high as this, and now I can't lift it at all.—Magpie.



Driver: "Heavens! I hope we haven't a flat tire."

Passenger (inspecting tire): "I don't think so. It's flat on the bottom, but the rest of it seems to be all right!"

IN THIS WORLD IT IS
NOT WHAT WE TAKE
UP BUT WHAT WE GIVE
UP THAT MAKES US
RICH.

—HENRY WARD BEECHER

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.

H. G. FISCHER & CO., Inc., Phone Armitage 0323
2335 Wabansia Avenue, Chicago

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.

FISCHER'S MAGAZINE



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368

MAY, 1925

**"GOOD WILL IS THE
DISPOSITION OF
THE PLEASED CUS-
TOMER TO RETURN
TO THE PLACE WHERE
HE HAS BEEN WELL
TREATED."**

—U. S. SUPREME COURT.

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.

MAY, 1925

No. 5

Physiotherapy Now an Established Part of the Hospital

It is an axiom that the modern hospital moulds public medical opinion, but it is true also that the public opinion at times demands that hospitals equip themselves with methods for treatment that, by practical experience, have proved to be of value in the relief of pain and in the treatment of disease.

The treatment of disease by physical measures is as old as medicine itself and we have all used some of these measures from the earliest days of our practice in a half-hearted way, but we have hesitated to adopt physical therapeutics as a part of our therapeutic armamentarium and have left its exploitation to the quack and irregular practitioner. Who is there among us that has not at one time or another lost patients to those irregulars and experienced the chagrin of being told that the method of these practitioners has achieved a cure where we have failed?

It is the history of all military hospitals with physiotherapy departments, that the return of men to the service was 30 per cent greater than from hospitals where physical methods were not employed. Modern physiotherapy was not developed as a specific for any one type of disease or surgical condition, but for its capability of affording the means for benefitting a very wide range of conditions. It takes cases in association with the internist and surgeon on the basis of a fully established clinical diagnosis and with full understanding of underlying pathology as a therapeutic adjunct only.

Electro-Coagulation

Its Place in Surgery

By T. HOWARD PLANK, M. D.

Chicago, Illinois

Electro-coagulation has a very distinct place in the surgery of today. While it does not take the place of the knife or scissors in the careful dissection of benign growths from among important nerves and blood vessels, it does do so for malignant growths that can be reached within cavities or on the surface of the body.

Control of the heat applied to a given area is accomplished by the size of the indifferent electrode and its distance from the active electrode. This indifferent or inactive electrode should be large enough to distribute any needed amperage over a sufficiently large area to eliminate any possibility of even reddening the surface of the skin. An eight by ten-inch block tin electrode is sufficient for all strengths of current needed and an electrode of this size is practical for small as well as for large amounts of current, which avoids the necessity of changing the indifferent electrode when one changes to a different milliamperage. The inactive electrode should be far enough from the active electrode to distribute the current equally throughout the surrounding tissues, thus eliminating all possibility of the destruction of normal tissues.

The current should be absolutely under the control of the surgeon, and this is accomplished by means of a foot switch. By this means only can he have the current instantly when he desires it and just as instantly can he shut it off. This is essential, otherwise a movement of the patient may cause him to burn healthy tissue, which will give needless pain if not do actual damage.

The active pole should be made as small as possible, consistent with the area being treated. Usually this will be an aluminum needle of sufficient length to reach the diseased area without inconvenience to the operator. A piece of rubber

tubing, which fits the needle snugly, will insulate it. There should not be over one-half inch of the needle exposed for use. This needle should be fitted into a handle with as few metal parts as possible and this handle fastened to a flexible cord of sufficient length to enable the operator to move freely to any desired position.

Electro-coagulation is ideal for warts, moles, keratosis, some nevi, fissures, hemorrhoids, tonsils, fistulous tracts, ingrowing nails, the rolled margin of lupus vulgaris and all surface malignancies. In these cases there is less tissue loss than with cutting. There is no bleeding, no stitches, no drainage, no infection, and there is a minimum of scarring or deformity. Most of the work is done under a one per cent solution of any of the local anesthetics used sub or inter-dermally.

The following cases will illustrate the results obtained from electro-coagulation:

Case No. 758. Came to us in 1919. The growth had started eighteen months previous and had been operated ten days

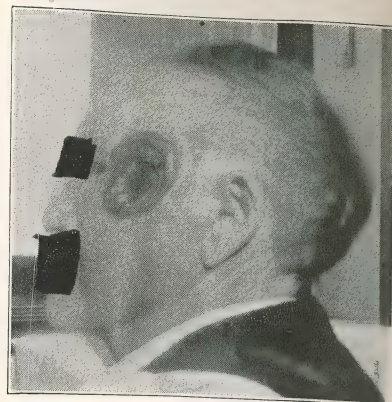


Fig. 1. Epithelioma before operation.

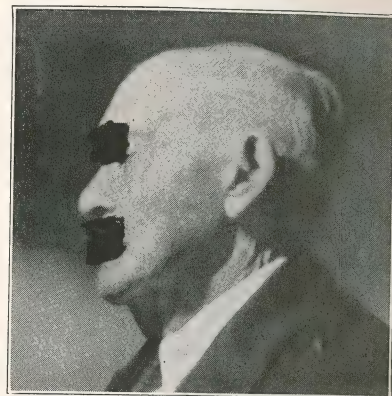


Fig. 2. Entirely healed after operation.

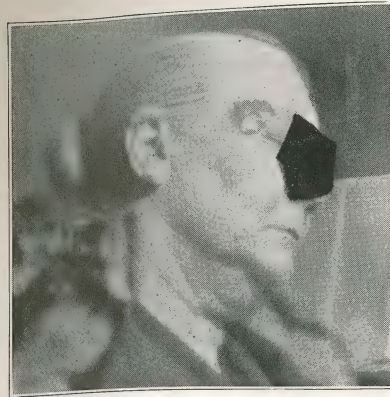


Fig. 3. Lupus Vulgaris before operation.

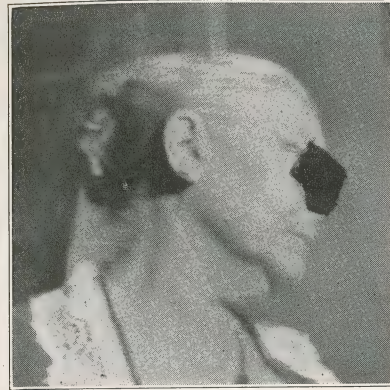


Fig. 4. Two months after operation.

before with immediate and rapid recurrence as shown in Fig. 1.

He was given a hypodermic of hyoscin, gr. 1-100, and morphine, gr. 1-4; three-quarters of an hour later he was given hyoscin, gr. 1-200, morphine, gr. 1-8, which was sufficient to keep him sound asleep while the work was being done. The Diathermy current was used throughout the operation. The meter registered 700 milliamperes.

The indifferent electrode was placed on the back, the active electrode was a needle. The time required was fifteen minutes. All soft tissues were destroyed down to and including the periosteum, which was also malignant, so the bone beneath it was destroyed by placing the needle on it and heating it white hot which destroyed the outer table of the skull. This piece of dead bone was removed three months later. At that time the soft tissue had healed up to the bone slough, in fact granulations had spread over its edges. Three weeks after the removal of the sequestrum the wound was

entirely healed as is shown in Fig. 2. There was very little scarring and the patient has remained well. Microscopic diagnosis: Epithelioma.

Case No. 144. Came to us in 1923 with a lesion, as shown in Fig. 3. This was a classical lupus vulgaris having the characteristic rolled edge. It had started eight years before, was not painful, did not involve the periosteum, and did not bleed when handled.

As the lesion was superficial, the monopolar current was used through a needle electrode, after having anesthetized the tissues locally as in the malignant cases. The tissue was destroyed until firm, healthy tissue was reached. Healing began at once and the after-treatment, actinic rays from the water-cooled lamp for one minute daily, was discontinued after twelve days. Two months later healing was complete and Fig. 4 was taken. This case has remained well.

Diathermy Treatment of Paralysis from Epidemic Poliomyelitis

Hugo Picard (*Monatsschrift fur Kinderheilkunde*, June, 1924) states that the diathermy treatment of epidemic poliomyelitis, if instituted immediately after the cessation of the febrile stage of the early part of the disease, resulted partly in complete cures and partly in marked improvement. Inasmuch as most of the symptoms of the paralysis are due to the pressure of the inflammatory edema upon the nervous muscle elements, a reduction of the edema and with it the cessation of the pressure is obtained through the diathermy. In addition, a destruction of the bacterial agent is brought about as a result of the high temperature induced. For localized paralyses (arm or leg) a transverse penetration of heat of the corresponding spinal segment and for complete paraplegias of both extremities the longitudinal, or possibly, a combined application is recommended. In addition, a peripheral diathermy treatment may be given to paralyzed extremities with marked hypothermia.

(From *Med. Jour. and Rec.*, April 1, 1925)

The Treatment of Peripheral Nerve Paralysis With Diathermy

A. LUX, M. D.

New York

A patient with a paralysis of the musculospiral nerve secondary to pressure will show, after the application of a constant galvanic current, an increased irritability of this nerve and the muscles supplied by it. The value of this observation has been greatly misunderstood. It is absolutely erroneous to expect a curative result upon a paralyzed nerve by means of electricity. Experiments made on rabbits and observations of cases of all types have led us to the following conclusion: We do not believe that the electric current has a specific curative influence upon the paralyzed nerve. We are nevertheless convinced that the constant current greatly increases the irritability of muscles and that according to a more recent theory the interrupted current in both forms, galvanic and faradic, prevents an atrophy of nerves.

I have for a long time known these facts and, somewhat discouraged by the limited usefulness of electricity, some years ago tried to use diathermy in the treatment of nerve paralysis.

Diathermy is a high frequency current of high voltage and low amperage, which produces a resistant heat in the body without any electric sensation. It makes it possible as a result to administer heat upon deep organs and thereby produce hyperemia in any deep seated part of the body.

Some years ago a girl of twenty was referred to me with a contusion of the arm, with paralysis of the musculospiral nerve by trauma. I decided to treat this contusion with diathermy and strangely enough the paralysis subsided long before the ecchymosis, swelling, pain, and other features disappeared. I then treated a series of cases of nerve paralysis with a combination of diathermy followed by electric stimulation with the idea of hastening the process of nerve recovery by diathermy and also to take advantage of the influence of the interrupted

current as pointed out before. The difference in the outcome of cases treated by this combined method compared with cases treated by electricity alone has been striking.

In the course of the last three years I have treated over one hundred cases of nerve paralysis, peripheral in origin, with excellent results.

Due to the fact that electrotherapy is still in its infancy, cases are mostly referred to us as a last resort and after all other forms of treatment usually have been attempted. And as a result, *ultimo ratio* an electrotherapist is given a rather unfair chance.

In September, 1924, a young gentleman was referred to me with the following history: Sixteen years ago a mastoid operation was performed on the patient. The facial nerve was injured in the course of the operation, which resulted in a complete peripheral facial paralysis of the left side. Electricity in all forms was tried in various institutions without any result and when the patient was examined at the Montefiore Hospital, the status was as follows:

"Face is drawn to the left side, no nasolabial folds visible on paralyzed side. By attempt to whistle or show teeth, typical picture of facial paralysis. Patient cannot close lid at all and the cornea shows signs of superficial inflammation due to exposure. Sensory of skin normal. Patient states that his face has been the same for the last sixteen years. The electrical reaction reveals partial degeneration of left facial nerve." Our impression of this case was typical facial palsy due to injury.

Diathermy was applied according to the usual routine. After five treatments patient reported that he felt as though his face was more pliable. After ten treatments the patient made the first attempt to close his eyes spontaneously.

Status made after twenty-four treatments shows: "Face appears equal on both sides. Nasolabial fold is distinct on both sides. Attempt to whistle, showing teeth shows no abnormality. Patient closes eyelid spontaneously. The electrical reaction of facial nerve reveals no difference as compared to the other side of the face."

The question now arises what explanation can be offered for such results in the treatment of nerve paralysis with diathermy especially in the case presented. It is rather unusual for us to obtain results after sixteen years' duration. Possibly there was a scar left on the facial nerve of the patient due to the injury he received. By localizing the site of this scar we were able to concentrate the entire diathermy current on this very spot and propagated the absorption of scar tissue. The hyperemia set in the entire course of the facial nerve has undoubtedly helped the regeneration of the nerve fibers which have been atrophied by the years of disuse.

As you will notice, I am constantly referring to the effect of hyperemia caused by the diathermy current and you will undoubtedly ask why should not baking or other forms of treatment, which also produce hyperemia, be of the same value. The fact is that the hyperemia produced by diathermy is entirely different from hyperemia caused by other forms of treatment. Baking and similar methods primarily warm the skin or mucous membranes and attempt to penetrate the deep organ subject to treatment. The current of diathermy produces heat directly in the organ itself, no matter how deep seated it might be. Not only this penetrating effect of diathermy is what makes it so effective, but another important factor should be kept in mind. The warmth produced by diathermy is originated by a free energy which is introduced into the body by the means of electricity. The warmth produced by the baking on the other hand is heat obtained by the energy of the organism itself and not as in the case of diathermy by an energy which is brought into the body. The principle of baking is to encourage the chemical interchange by increasing the local metabolism through the reaction set forth by the baking of the skin. In other words, the hyperemia of the organ to be treated is due to the biological reaction of the body upon the sensation of heat.

As you will see, there is a fundamental difference between the two methods. While diathermy brings a surplus of energy into the diseased tissues, baking and all other heretofore known forms of treatment cause an increased use of the body's own energy.

(From Med. Jour. and Rec., April 1, 1925)



Hanovia Quartz Lamps

Alpine Sun Lamp
(Air-cooled)

Kromayer Lamp
(Water-cooled)

You can never mistake one of these quartz lamps for any other. Their world-wide use and their therapeutic achievements have gained a unique position for them. Skilled workmen, who have devoted years to fine mechanical work, produce these lamps. The entire quartz mercury anode type burners give the maximum intensity of Ultra Violet rays. For low operating cost and adaptability during therapeutic procedure they are without a peer.

Complete descriptive literature will be mailed on request

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Diathermy Treatment of Arthritis

MILES J. BREUER, M. D.
Lincoln, Nebraska

(From a letter written in answer to an inquiry by a physician as to method employed in treating arthritis by diathermy.)

"I suppose you referred to chronic arthritis. A careful examination and history are first necessary. Causative factors must first be determined. Find and clean up all foci of infection. Do not promise the patient that if he has his tonsils out and teeth pulled that his rheumatism will get well; often it does not; but the infection must be cleaned up before the patient can ever hope to get well.

"I give these cases 15½ gr. each of sodium salicylate and sodium iodide intravenously daily; and foreign protein (milk) intramuscularly every third or fourth day. Actinic light may or may not be indicated, depending on the state of nutrition of the patient; the thin, weak, anemic ones should certainly get it.

"Treat the patient as well as the arthritis; clean up and correct every fault and defect, and try to get them into good physical health.

"Then, treat the joints with diathermy, daily or twice a day. On large joints, a mesh electrode on opposite sides; on smaller joints a cuff above and below; on fingers and toes, a cuff above, and the hand or foot in saline solution. Put in as heavy a current as the skin will stand; for thirty minutes or more at a time. The deep radiant lamp may be used in conjunction."

New Series of Monthly Meetings in Various Cities

Beginning very shortly, monthly meetings and clinics will be held in various cities throughout the country. These meetings will be patterned on those which have proved so successful and popular at our Chicago office.

Watch For Further Announcements

Diathermy and Autocondensation in Medicine

LEO C. DONNELLY, M. D.
Detroit, Mich.

The resistance to the passage of the D'Arsonval current, with its measurable low amperage and high controllable voltage, through tissue, produces heat within the tissue. The patient feels no electrical sensation when the apparatus is working properly and the electrodes are making good contact. The location and amount of heat generated within the tissues is controlled by the amount of current used and by the size, shape and position of the electrodes. Tissues vary slightly in their electrical resistance. Fat and bone heat up more rapidly than tissue with a good blood supply. The blood supply carries away heat from the local point of application and warms the entire body. The toleration of the patient is the usual guide, provided that the parts treated are not anesthetic. A pull switch attached to the machine allows the patient to turn off the current at will. The patient, realizing that he can instantly stop the treatment, relaxes.

Medical diathermy allows the physician to heat any organ to physiological limits. The heat is generated within the tissue. For this reason medical diathermy is best among the good methods of applying heat, such as infra red, radiant lamps, hot water bags, ovens, poultices, etc. Nature uses heat to facilitate chemical reactions. Medical diathermy is the best controlled method at present available to the medical profession for the application of heat.

Auto-condensation is a form of medical diathermy. The patient lies on an auto-condensation pad which is a dielectric. One of the diathermy outlets is attached to the auto-condensation pad and the other outlet usually to a handle held by the patient. Instead of the patient holding the handle, an electrode may be placed over the seat of disease, such as the gall bladder, or in the cervix, etc. This is sometimes called indirect auto-con-

densation. Auto-condensation is different from "through and through" medical diathermy in that the auto-condensation pad (a dielectric) forms an electrosphere in which the patient lies. This electrosphere may be demonstrated in a dark room by holding a glass vacuum electrode close to the patient, which causes the electrode to glow with a violet light. Sometimes it will light up at a distance of three feet from the patient. The electrosphere may also be demonstrated by touching the patient, on contact a spark will jump from the patient. Auto-condensation heats the entire blood stream more rapidly than diathermy, causes the patient to perspire more profusely, draws more toxins out of the body and into the intestinal tract. An alkaline cathartic should be given following heavy auto-condensation treatments to aid elimination of toxins, preventing re-abortion.

It is now usually accepted that the effects of diathermy and auto-condensation are due to heat and heat only. The older writers wrote of an electric effect upon the tissue cells. If the effects are due to heat and heat only, then the medical profession must change its views as to the beneficial effects of heat, because diathermy and auto-condensation will bring about better results than can now be obtained from any other form of heat.

Diathermy is advantageously used to heat the temperature of a part sufficiently high to directly destroy germs as in the treatment of acute cervical or urethral gonorrhoea. In these cases the parts must be heated to a degree uncomfortable to the patient and this heat must be continued for a period of twenty minutes.

German silver mesh electrodes mold themselves well to irregular surfaces. Twenty-two gauge block tin electrodes are valuable for flat surfaces. Felt, cotton wadding, spongiopiline or rubber bath sponge, saturated in a five per cent saline or five per cent sodium bicarbonate solution make good moist electrodes. Moist electrodes should be covered with a square of rubber tissue so that the moisture cannot escape. If all electrodes could be continually kept moist with a five per cent

saline or five per cent sodium bicarbonate solution the skin resistance would be markedly reduced and the patient would feel less surface heat and obtain more internal heat. Applying electrodes comfortably warm is agreeable to the patient.

An equal amount of electric current passes through each electrode. If one electrode is small the current will be concentrated and that part will be much hotter than the large electrode. The large electrode is often called the indifferent electrode; the small electrode, the active. If both are of equal size the terms indifferent and active are not used. When electrodes of equal size are used the intervening parts are heated practically evenly. When the electrodes are of unequal size the point of maximum heat is near the smaller electrode. The physician must figure where he wants his greatest heat and then arrange his electrodes according to position and size to bring this about. All of the tissues between the electrodes are heated. The blood circulating between the electrodes is heated. In time the entire blood stream becomes heated and the patient perspires.

Diathermy and auto-condensation produce increased heat in the tissues. Increased heat in the tissues is followed by increased arterial blood supply. Increased arterial blood supply brings about increased nutrition. Increased nutrition means increased health of the part. Increased health of a part brings about changes according to the function of the part. The following instances may be cited. Increased health of the liver means an increased activity of all the functions of the liver and a decrease in the disease or disfunction of the liver. Increased activity of the organs of elimination such as the kidneys, skin, and intestinal tract means increased elimination of the body's waste matter. Ridding the body of waste matter aids the body. Increased health of voluntary muscles means development and growth of these muscles, also diminution of pain and disability due to injury of muscles. Increased health of involuntary muscles such as the muscles of the heart and vascular system, the intestinal system, of the uterus and tubes, means increased function and decreased disability of these muscles. Increased health of bone, joint, and ligament tissue means decreased time in

restoring these parts to normal following injury. Increased health of the nervous system results in benefit to the patient. Auto-condensation and diathermy tend to produce these results.

Concerning the Course for Nurses

Some time ago, this Company announced a Course for Nurses and Office Assistants, designed to give them an intensive training in the handling of Diathermy apparatus which would make them more efficient helpers for the physicians who employ them.

Since then, we have received so many suggestions and counter-suggestions, inquiries and comments, that we are frankly a bit puzzled as to how to handle the situation! So, we are asking for advice and help.

If you are interested, or if you have a suggestion as to such a course, will you please drop us a letter or a card outlining your suggestion? Your comment will be greatly appreciated, and from the reaction of many physicians thus expressed, we shall be able to work out some constructive program that will be for the good of all.

Remember, this is not a Nurse's Course; it is intended purely as supplementary training, in the use of diathermy apparatus.

Diathermotherapy in Peripheral Facial Paralysis

A. BORDIER, in *Paris Medical*, 1923, no. 50, says the peripheral origin of a facial paralysis may be tested by injecting pilocarpin at two symmetrical points into the fascia, when an intense perspiration will arise on the well side and none on the paralyzed side; also by the rotation of the eye on the paralyzed side when the patient closes his eyes slowly, fixing them on the observer's finger held a yard in front of him. The author shows that a cold muscle, however completely normal, behaves in response to electrical stimulation like a muscle affected with a partial reaction of degeneration: this reaction disappears when the muscle is warmed by a current of diathermy. In

correspondence with this, the effect of the galvanic current is much greater on a paralyzed muscle submitted to diathermy than when chilled.

(From *Amer. Jour. Electrother. and Radiol.*, Jan., 1925)

Germ Killing Effect of Ultra-Violet Measured

A study of germ killing action of ultra-violet rays has been made by the Bureau of Standards, Department of Commerce, 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.

The shortest waves were found to 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 killing action was found to result even from waves as long as 355 millionths of a millimeter, which is almost as long as the shortest waves visible to the human eye. Prior to this experiment doubt had been expressed regarding the ability of these longer waves to kill bacteria.

Common Sewage Germ Used

Bacterium Coli Communis was the victim of the tests. This germ is always found in human sewage or in waters that are polluted and likely at some time to contain typhoid. The germs were turned loose in a large volume of water and some of this water was sprayed onto petri dishes containing a solidified jelly, specially prepared to suit their tastes. Those germs not killed by the rays increased and multiplied and in a few days formed colonies visible to the eye. A quartz mercury vapor lamp was used as the source of ultra-violet rays, screens being interposed to cut off successive spectral ranges of the wave lengths which cause germicidal action.

When the intensity was very low the killing action was greatly retarded. In some experiments an exposure of 75 to 80 seconds was required. On still lower intensities there was some

indication that the bacteria were stimulated instead of being killed.

Other tests were made to compare the relative value of continuous and intermittent exposures. It was found that the killing effect was proportional to the total exposure, whether this was given all at once or was divided into several short exposures with periods of rest between.

Can Kill in Less Than a Second

Rays of sufficient intensity, it was found, could kill bacteria with an exposure of less than one second duration. A certain minimum intensity was required for this, and when using a 320 watt mercury lamp this intensity was obtained at a distance of six inches from the lamp.

(From *Amer. Jour. Phys. Ther.* April, 1925)

Deep Roentgen Therapy and Diathermy in Treating Sciatica

F. KRAUS. *Zeitschrift für die Gesamte Physikalische Therapie* 1924, 28: 80.

The author employs irradiation of the roots almost entirely, raying peripheral pressure points only when the pain is localized exclusively at one particular point. The locality treated is the cauda equina with the tube directed obliquely in order to completely embrace the spinal roots. The focal skin distance is twenty-five centimeters, five Holzknecht units are used, four millimeters of aluminum filter for patients who are particularly nervous, with the object of moderating symptoms often of great severity. Subjective relief follows promptly, and after two or three days a reaction with considerable pain and distinctly perceptible swelling of the nerve fibers. To alleviate these symptoms the author combines the x-ray with diathermy, so as to warm up the nerve roots and trunks, and continues the procedure until the pain is decidedly relieved. Raying is repeated in three, four, and six weeks. The author has succeeded, not only in bringing about a cure in a large number of cases, but also in producing results frequently brilliant in the severest forms of neuralgia and even in postneurotic sciatic paralysis.

(From *Med. Jour. and Rec.* April 1, 1925)

Treatment Records Wanted

We have had a number of requests for information as to the correct form for treatment records for electro-physiotherapists.

Needless to say, such records are of the utmost importance to the physician. In a science as new as this one, it is essential to keep the most careful record of the treatment of every case, the modalities employed, how used, and results obtained.

Perhaps some of our readers can help us answer these inquiries. If you have a good system of records of physiotherapeutic cases and treatments, doctor, let us have the details. Send us some specimen case records for publication. Not only will the editor appreciate your courtesy, but many of your fellow physicians will be truly grateful for your help in solving one of their problems.

Diathermy in Pharyngeal Cancer

D. McKenzie, in the *Brit. Journ. Radiol.*, advocates diathermy in the treatment of both eradicable and inoperable pharyngeal cancer. Its value lies in its double action of cauterizing and coagulating the diseased tissues, with a sterilizing effect upon the surrounding tissues. In dealing with a limited cancer the primary deposit should be removed by diathermy and the lymphatic glands by combined dissection and diathermy, the intervening tissues being treated by diathermy puncture. While this can be done at one sitting McKenzie thinks it is better to divide it into two separate operations. In inoperable conditions bold and wide diathermy of tissue will prolong life, and the glands after diathermy puncture may shrivel and disappear. Although it must be admitted that diathermy may encourage malignant growth, yet the fact that its action is both destructive and actively germicidal renders such a result less likely than after treatment by other methods. In post-cricoid carcinoma diathermy may be applied by means of a blunt terminal.

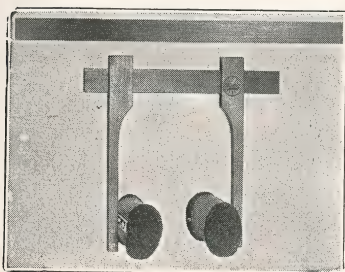
"Yours Received and Contents Noted"

That reply card, in a recent issue of Fischer's Magazine, asking our readers to name the subjects they would like to see discussed in this publication, brought a regular flood of answers!

So, in this issue we are taking up several of the subjects requested. From issue to issue we shall do the same, until we have covered the field. If your particular request seems long withheld from attention, remember, please, that there were a great many others in the same mail!

Meantime, let us suggest again, that physicians are welcome to write us, at any time, for advice on any technical question of operation of our apparatus; and that any requests for information as to the use of diathermy in any class of cases will gladly be handled by us. We will either publish the answer in this magazine, send you a reprint of a previous article covering the case, or refer your letter to competent medical authorities for reply.

New Fischer Diathermy Clamp



Made Entirely of Wood. No Short Circuits Possible

A polished wood bar supports two sliding arms which hold the electrodes firmly in place. Instantly adjusted by sliding the arms on the bar. Supplied complete with mesh covered sponge electrodes.

No. 930 with mesh sponge electrodes complete, code
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Ultraviolet Therapy in Peritoneal and Glandular Tuberculosis of Children

By HENRY J. GERSTENBERGER, M. D., Cleveland O.

In discussing this condition before the Seventy-Fifth Annual Session of the American Medical Association at Chicago, June, 1924, Dr. Gerstenberger said, in closing: "The results that we get by using an artificial source of ultraviolet light are so marked that sometimes we wonder whether we are seeing straight or not.

"One of our patients, a colored girl, aged 7 years, came only to the dispensary for treatment. She refused to go to the hospital. She had a terribly distended abdomen, filled with gas and fluid. She was emaciated and looked very ill and tired. Ultraviolet ray therapy was started, and twelve days later the abdomen was reduced in size and we could then feel for the first time, in the right lower side, a large mass of matted together glands and intestine or omentum. Inside of six weeks the whole trouble was gone, although the child had remained at home in a poor environment and had come to the dispensary for treatment.

"It would seem to us from the experience we have had that the effect of the ultraviolet rays is to aid the body in fighting the disease and winning its own battle. It does not seem to be a specific effect. The actinic ray is unquestionably of decided value in this type of tuberculosis. Of how much actual value it is in other types it is more difficult to state, because the improvement is not so outstanding. It seems especially and preeminently effective in tuberculosis of the mesenteric glands. They seem to have a peculiar advantage over other glands. What this is, I do not know. Possibly their large number or their anatomic location play a role. The bronchial glands are next in order of response, and last the peripheral glands.

"Whether another combination of rays than that produced by the quartz mercury vapor arc lamp is more or less effective is a question that we cannot answer, because in this work our experience was limited to the use of the quartz lamp."

(From Jour. A. M. A., Nov. 22, 1924)

Conservative Electrothermic Treatments of Tonsils

A. I. ARNESON, M. D.

Austin, Minn.

The writer believes that it is in the field of conservative management of diseased tonsils by electrothermic methods that the great future development is to take place; that in electrothermic methods we have great therapeutic possibilities and that before so very long we may find that the instances of real need for radical removal of tonsils, by surgery or coagulation, will become less and less frequent.

The physician in charge of a given case must decide first whether or not an emergency exists, demanding immediate removal of the tonsil. If no such emergency exists, he must next decide whether or not in his judgment there is a possibility that too much destruction has not taken place and other factors are favorable for a possible restitution to normal or to a safe condition. If it is decided that the tonsils might possibly be saved *by any method of treatment*, it is assumed that the majority of readers will agree that it is desirable to do so. Until the advent of modern high frequency machines and the ultra-violet ray apparatus, we had no means of treating diseased tonsils, which seemed to be of even a little value. The following brief outlines of technics are presented in the hope that others will try them or modifications thereof, report their results, and so in time make it possible to determine their true value.

The writer is convinced that the problem of conserving tonsils involves the management of infections of the nose and post-nasal space as intimately as it does the tonsils themselves. It appears impossible to conceive of any management being devised for eliminating infection from the tonsils successfully and yet leaving the cesspools of infection in the nose, accessory sinuses and post-nasal space to drain their infections continually to the tonsils. Before any method can succeed with tonsils, these infections higher up must be attended to. These infections should receive scrupulous attention in cases where radical re-

moval of tonsils is practiced also. The future welfare of the patient demands it.

The object of the treatment of the tonsils, both by ultra-violet and high frequency means, is to try to produce a non-specific inflammation. When an acute infection occurs anywhere in the body, nature sends her policemen, the leucocytes, to the field of action. If the leucocytes win, the bacteria are destroyed and the inflammation subsides and the parts involved return to normal, barring any physical or mechanical damage done while the battle raged. If, however, the bacteria are triumphant, they take up permanent abode in the conquered land and the army of leucocytes withdraws, and we have a chronic infection established. Now if we can by some means bring about a great concentration of leucocytes in this infected area without at the same time increasing the number or virulence of the bacteria, and maintain this concentration for a sufficient length of time, it may reasonably be expected that the result will be an annihilation of the infection and a return of the parts to as near normal as possible, barring permanent structural changes such as fibrosis, etc. This is the principle upon which we apply the Oudin current and the ultra-violet rays in the attempt to conserve tonsils.

Ultra-Violet Rays

These are not electrothermic in nature but are included inasmuch as they seem to fill a certain field in this work. They are applied by means of the water-cooled apparatus, through an all-quartz rod applicator. Two different technics may be tried, viz; exposing each area of the tonsil with a little less than a blistering dose, or, exposing each area with say twice the blistering dose of rays and keeping records of the results and later on comparing them. These methods are of chief use in young children and infants and then only in the soft, succulent, actively congested stage. They are not of much value in later stages which have developed definite infected crypts, fibrosis, etc. Treatments are repeated as soon as the reaction of one treatment subsides and so continued for several months if necessary. A great many of these child patients need the general body radiation with ultra-violet rays also.

Monopolar Current

The needle electrode, after bending to desired shape, is insulated by means of melted sealing wax flowed over it, covering all exposed portions of it excepting about 1-32 of an inch at the extreme point. This wax is not sufficient insulation against the spark except when the naked point is kept in close application to the tissue. Having determined the intensity of spark you wish to use, we proceed; no anesthetic whatsoever is used. In case of excessive gagging, try spraying the mouth and pharynx with camphor water, and have your tongue depressor and pillar retractor *very cold*, keeping them in ice water except when actually using them. The first step of the treatment is to insert the needle electrode into one of the crypts of the tonsil, turn on the current with the foot switch, hold the electrode in place while counting, say five seconds, and then draw it slowly out of the crypt, with the current flowing. A slight amount of steam may be noted issuing from the mouth of the crypt. The current is turned off at the foot switch before the extreme end of the electrode emerges from the crypt. This procedure is repeated for each crypt that can be found. As a final step, the point of the electrode is *laid* against the surface of the tonsil, the current turned on, and the point rapidly passed over the entire surface of the tonsil, turning it white. The only sensation to the patient should be one of moderately distinct heat in the treated area. Do not allow a long spark to fly from point to tonsil at any time as this is fulguration and of little value and unnecessarily disturbing to the patient. These treatments are repeated as soon as the reaction from one treatment subsides, and repeated as many times as the physician thinks necessary. As an adjunct to this may be tried radiant light to the throat, followed by gentle effleurage to promote lymphatic drainage along the cervical channels. This monopolar treatment is not applicable to the very young as a rule, but the ultra-violet rays probably do as well in the very young as the monopolar current could, so that is of small consequence.

Nasal Treatment

Having given the tonsils a treatment, attention should now be turned to the nasal passages and accessory sinuses and the

post-nasal space. In case of well developed adenoids, the common surgical removal should be done before any other treatment is attempted. If not marked, wait a while and see if the other treatments do not have a salutary effect on the adenoids also.

The first treatment usually given is to tampon the nasal passages with cotton pledgets saturated with Argyrol, 40 grains per ounce, according to Dowling's procedure. The patient lies dorsal or even in Trendelenberg position on a table while this treatment is given. The pledgets remain in place one hour. At the same time, the monopolar current is used to activate a non-vacuum electrode of the "body" type, which is held against one cheek for the first half hour and against the other for the second half hour. A moist electrode plate is applied to nape of neck and grounded and current is turned on to limit of patient's tolerance.

On the following day and alternating days thereafter, we give the following treatment if the patient will permit, by reason of age, tolerance, patency of nasal passages, etc.: A special intra-nasal non-vacuum electrode is introduced into one nasal passage, connected to monopolar pole and current turned on to limit of patient's tolerance and applied for twenty minutes and repeated in similar manner in other nasal passage. Immediately following these treatments, the ultra-violet rays are applied to the nasal mucosa, each nostril, by means of special quartz rod applicator. About three-fourths of a blistering dose is applied as far back as the applicator will reach. This is then withdrawn about one-half inch and similar dose repeated. This is continued until entire nasal mucosa in both nostrils has been so rayed.

These treatments are continued in alternation with each other until it is estimated that the desired result has been obtained. Young children and some adults can not be treated by the Intra-nasal Monopolar and Ultra-violet method but in these cases the extra-nasal monopolar and the Dowling tamponade is used daily at first and then extended to every second and third day as may seem indicated.

(From Amer. Jour. Phys. Ther., March, 1925)

Diathermy in Myocarditis

By BARUCH LAST, M. D.

New York, N. Y.

Cases of myocarditis of not long standing, accompanied by a feeling of oppression, painful sensations around the cardiac region, and occasional attacks of angina pectoris, are benefited by this form of treatment. It may not be successful in one hundred per cent of the cases, but in each and every case included in this category diathermy should be given a trial, especially when about five treatments will undoubtedly tell whether a course of treatments will be beneficial or not.

There are certain symptoms and physical signs which, after five treatments, will be a positive indication of the advisability of continuing the treatment. If there is a partial cessation of painful sensations and of oppressions; if there is a lowering of the pathologically increased blood pressure, not only after each treatment, but if it is also less at each consecutive treatment, so that there is a steady lowering of the blood pressure value without exaggerated fluctuations, we may be sure that we are dealing with a case that is going to respond. If these things do not occur nothing should be expected of the treatment and it should be discontinued.

The following is the technic of the procedure. Two metal plates of nearly equal size should be used. The slightly smaller one, four by six inches, is placed in front over the precardium, and the larger one, five by eight inches, in the back exactly opposite the first one, the patient being in the prone position. The current applied should not exceed 1000 milliamperes even if the patient does not feel the heat, as the maximum dose is unnecessary and might even be harmful. The duration of the treatment should be from ten to fifteen minutes, never longer. The patient should be allowed to rest one half to one hour after the treatment. The pulse should be counted and the blood pressure taken before and after treatment. The pulse rate in-

creases in some cases after the application and the blood pressure is lowered in all cases. The treatment should be given every other day and the entire course of treatments in the responsive cases should number twelve to twenty until the symptoms subside.

(From *Med. Jour. and Rec.*, Feb., 18, 1925)

Diathermy In Neuritis

By MILES J. BREUER, M. D.

Lincoln, Nebraska

Answering an inquiry, Dr. Breuer says:

"I would advise that diathermy be used in the early stages of the neuritis, before degeneration of the nerve-fiber has taken place; this with the hope of saving the fiber from degenerating, if possible.

"Supposing that degeneration takes place anyway. Then our problem is different. If the nerve-cell body is intact, the fiber will regenerate, and will do so just as well without diathermy as with it. If the nerve-cell body has been destroyed, nothing in the world will bring back the fiber. Therefore, diathermy is not indicated any further. In such a case, our job is to preserve the nutrition of the muscles until the new nerve fiber again takes up its duties; otherwise, by the time the nerve-fiber regenerates, the muscles may be too far atrophied to recover function again.

"The nutrition can best be preserved by the use of the galvanic current. Stimulate individual muscles with one pole at each end. Use a stimulus about a third or a fourth as strong as the minimum required to produce contraction in the corresponding muscle on the healthy side; and gradually increase the strength, to the minimum that will produce a contraction. Give one, two to five contractions of each muscle at a sitting, once or twice daily; about one per second.

"When regeneration is complete, the muscle will again respond to motor-point stimulation; this may be used, to lead up to passive, and finally active motion."

A General Index to Fischer's Magazine

Prepared by P. H. FLEMING, M. D.

St. Martinsville, La.

We are indebted to Dr. Fleming for this general index, which is a duplicate of one the Doctor compiled for his own use. The index covers all issues of Fischer's Magazine from October, 1922, to December, 1924, inclusive.

The first number denotes the month the magazine was issued, the second number the year, and the third, the page. For instance: Adhesions, Visceral—10-23-11, will be found in the October number, 1923, page 11.

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Diathermy Treatment of Leucorrhea Due to Endocervicitis

Lindsay Peters, in the Cal. State Jour. of Medicine, remarks that endocervicitis has puzzled the profession who have reacted with a legion of sure cures as a result of which this class of cases is constantly on the rounds of the doctors' offices for an infinite variety of douches and topical applications, some of which as lunar caustic often produced a subsequent cicatricial stenosis of the os with all the train of pathological conditions and symptoms.

He believes that Guy L. Hunner in 1915 first used the actual cautery in endocervicitis and that the only improvement in Hunner's method is the use of the electrocautery instead of the benzene cautery. The author reports three cases so treated and refers to R. L. Dickinson of New York, who reports the use of this method in an extended list of cases.

The author says he is not acquainted with any other agent except perhaps radium, with which he has had no experience, which might be capable of producing results as satisfactory as the cautery.

Since we have in this condition an infection plus a congestion which may be aggravated by a stricture the indications are perfectly plain; viz., by enlarging the stricture with negative galvanism, for its germicidal effect. The further use of the vacuum electrode and the static wave current will decongest and a speculum may also be tried if other methods be not available.

(From Am. Jour. of Phys. Ther., Nov., 1924)

New Schedule of Waggoner Physiotherapeutic Clinics and Lecture Courses

By Mel R. Waggoner, M. D.
Cedar Rapids, Iowa

Doctors who are keeping pace with the development of physiotherapy will find these lectures and clinics a most valuable source of new information and up-to-date practices.

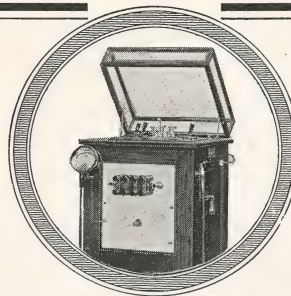
Classes for the Coming Season Follow:

Indianapolis, Indiana	- - - - -	May 11th to 16th
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Detroit, Michigan	- - - - -	May 18th to 23rd
	(Wolverine Hotel)	
Pittsburgh, Pennsylvania	- - - - -	May 25th to 30th
	(Wm. Penn Hotel)	
Newark, New Jersey	- - - - -	June 15th to 20th
	(Robert Treat Hotel)	
Quebec, P. Q., Canada	- - - - -	June 22nd to 27th
	(Hotel Chateau Frontenac)	
Montreal, P. Q., Canada	- - - - -	June 29th to July 4th
	(Hotel Mount Royal)	

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A PAGE OF FUN

"A fellow just told me I looked like you."

"Where is he? I'd like to knock his block off."

"I killed him."

□ □ □

Alma: And did you visit Rochester on your wedding trip?

Mae: I really don't know. You see, Jack always bought the tickets.

□ □ □

Lawyer: "The cross-examination did not seem to worry you. Have you had any previous experience?"

Smiling Witness: "It was easy. I am used to getting home late and answering my wife's questions."

□ □ □

Son: What is a periphrasis?

Father: It is simply a circumlocutory and pleonastic cycle of oratorical sonorosity, circumscribing an atom of ideality lost in verbal profundity.

A doctor brought a dyspeptic farmer a big, brown pill.

"I want you to try this pill at bedtime," he said. "It's a new treatment and if you can keep it on your stomach it ought to cure you."

The next day the doctor called again. "Did you manage to keep the pill on your stomach?" he asked eagerly.

"Well, the pill was all right so long as I kept awake," said the farmer, "but every time I fell asleep it rolled off."

□ □ □

A scion of a prominent New York family of German extraction recently gave this example of how English was spoken in his grandfather's home:

"Johnnie, come in once already."

"What should I?"

"Because dinner. Father and mother's on the table and Charlie's half et!"



Surgeon (after patching up Mandy, who was struck by an auto): "Well, Mandy, you ought to get some damages out of this."

Mandy: "Lawdy, I've got all de damages I wants; what I needs is repairs!"

A REMINDER

Don't Miss The Monthly Physiotherapy Meeting On

Monday, May 11, 1925

An Interesting Program Is Offered, As Follows:

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

"Surgical Diathermy in the Treatment of Malignancies." A comprehensive discussion of various types of malignancies, together with practical demonstrations of the details of technic 10:30 to 12:30 M.

A. R. HOLLENDER, M. D., Chicago, Illinois

"Influence of Unusually Large Doses of Ultraviolet Radiations on the Nasal Membrane." 1:30 to 2:30 P. M.

MAURICE H. COTTLE, M. D., Chicago, Illinois

"Difficult Hearing; A Report of Some Recent Studies in Its Treatment." 2:30 to 3:30 P. M.

Dr. Yocom will show you exactly how malignancies are handled, from start to finish. The practical demonstrations will give you data you can take home and use in your own practice.

Doctors Hollender and Cottle have put in a great deal of time and effort in the compilation of data and the preparation of their reports, and we know from what they have shown us that you will profit greatly through hearing these original and scientific papers.

Physicians and surgeons are invited to attend this meeting, without charge or obligation. Additional space has been secured to ensure every visitor a good seat at the meeting.

H. G. FISCHER & CO., Inc., Phone Armitage 0323
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Program for Our Monthly Physiotherapeutic Meeting

Monday, August 10th, 1925

- CHAS. E. STEWART, M. D., Battle Creek, Mich.**
"Physiotherapy in a Sanitarium"..... 10:00 to 11:00 A. M.
- BASIL M. TAYLOR, M. D., Portland, Ind.**
"Common Sense in Diathermy"..... 11:00 to 12:00 A. M.
- C. W. WESTERMAN, M. D., St. Louis, Mo.**
"The Use of Light Therapy by the General
Practitioner" 1:30 to 2:30 P. M.
- CHAS. E. STEWART, M. D., Battle Creek, Mich.**
"Physiotherapy in Nervous Disorders"..... 2:30 to 3:30 P. M.

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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.

Experience at the Battle Creek Sanitarium, of which he is Associate Medical Director, gives Dr. Stewart a wonderful background for his discussion of the subjects he has chosen. Dr. Taylor's talk on Common Sense in Diathermy will be illustrated by a number of cases recently treated by him with very satisfactory results. In his talk on The Use of Light Therapy by the General Practitioner, Dr. Westerman brings to bear his practical experience, which physicians will find most instructive and valuable.

Ample lecture-hall facilities have been provided, and physicians and

surgeons are assured of proper facilities for getting the most out of this splendid program. There is, of course, no fee—just come to the main office and accommodations will be provided for you.

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FISCHER'S MAGAZINE



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JULY, 1925

"WE HOLD THESE TRUTHS TO BE SELF-EVIDENT: THAT ALL MEN ARE CREATED EQUAL; THAT THEY ARE ENDOWED BY THEIR CREATOR WITH CERTAIN INALIENABLE RIGHTS; THAT AMONG THESE ARE LIFE, LIBERTY AND THE PURSUIT OF HAPPINESS."

—From the Unanimous Declaration of the Thirteen United States of America, in Congress, July 4, 1776.

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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H. G. FISCHER & CO., INC., 2333-43 Wabansia Ave., Chicago, Ill.

Vol. IV.

JULY, 1925

No. 7

Does Fischer's Magazine Reach YOU Every Month?

Not long ago, a physician said to us, "Why is it that I don't receive your little magazine every month? I read every issue that comes to me, but about every other month you pass me up!"

We investigated—and found that, according to our records, our friend the physician had not been skipped in the mailing of the magazine since his name first went on our list, some two years ago. Our records on this point were quite positive; so we asked him to investigate a little at his end.

He discovered, much to his surprise, that the girl in the outer office who received the mail for several physicians, had been "holding out" Fischer's Magazine! Because it is not mailed under first class postage, which would be quite expensive in the case of a list as large as ours, she had classed it with "advertising" matter, and the doctor was the loser.

It occurred to us that perhaps here might be the answer to a great many of the complaints that come to us from time to time concerning non-receipt of some particular issue or issues of the magazine. Without doubt, the same system of mail distribution obtains in many of the offices to which it is mailed; and the same error might well occur.

The remedy, in that case, is to issue instructions that Fischer's Magazine is to be placed on your desk without fail, every month, the moment it arrives!

The Physiotherapeutic Treatment of Keloid and Keloidal Growths

By CURRAN POPE, M. D.

Medical Director, The Pope Sanatorium and Consulting Neurologist
and Physiotherapist, St. Anthony's Hospital
Louisville, Kentucky

Keloid is a new growth, or tumor of the skin, consisting of whitish nodules or ridges and plates of dense tissue. The ridges tend to recur after removal. They are sometimes tender or even painful. The condition is extremely prevalent in the colored race, and is believed to be dependent upon traumatism. Cicatricial or false keloid resembles a true keloid but is due to a hypertrophy of a cicatrix. Some we have seen resembled a coxcomb; others present brush or fringe like appearances, and still others broad, flat, raised places in the cicatrix. Their color is usually pinkish-purple. They are rather hard to the touch and when they are so located as to cause the collar or clothing to catch upon them, and produce friction, they grow more rapidly and are mechanically annoying. They should never be excised, unless they mechanically interfere with a part. Local applications generally recommended such as ichthyol, creosote, salicylic acid and others are valueless. The same may be said of plasters and internal medication.

Four physiotherapeutic measures are of value. They are x-ray; actinic light, watercooled; galvanic ionization; and diathermy treatment. In our hands the best results have been obtained from the first two. The same objection may be urged against dessication by the indirect method or the heavy spark fulguration that was said of surgery. A very trifling experience with fulguration in small keloids and keloidal cicatrices has taught us that nothing is to be gained by this method, and we therefore never use it. The only value of diathermy is in its medical, or internal heating, form. This may precede the use of the actinic light and seems to enhance its activity. The water cooled lamp should be employed with an applicator large enough

to cover a section or the entire keloid and pressed upon the scar so as to dehematize the growth. It should be pushed to the point of producing an active dermatitis.

The *galvanic current* should be employed as follows: The large indifferent pad should be placed upon some adjacent area of the skin and attached to the positive pole and the active electrode placed over the keloid itself, and attached to the negative pole. With this latter electrode I prefer to bring the metal in direct contact with the keloidal cicatrix itself. Under this treatment ordinary, hard cicatrices as well as keloidal cicatrices will disappear. This result is, in my opinion, the result of an arrest of development and prevention of further growth followed by retraction rather than an actual absorption of the keloidal cicatrix. If the galvanic treatment is used, an excellent plan is to use diathermy or radiant heat to the growth first and then ionize it with 2 per cent of sodium chloride or sodium salicylate or 2 per cent sodium iodide solution, remembering that all of these are electro-negative and should therefore be applied to the cicatrix with the negative pole.

The sheet anchor, however, of the treatment is the x-ray. The technic employed by us is as follows: With a proper cone covering the areas involved, and with the keloidal cicatrix exposed to the ray, we set the machine with a 5-inch spark gap; anodal distance 10 inch, aluminum filter 2 millimeters, meter reading 5 to 10 M. A. A dosage of 50 to 100 milliampere minutes is given. These applications are given usually twice a week; sometimes three times weekly. We have found it of great advantage to distribute the treatment over several months.

When the scar begins to lose its color and to retract it is well to cease treatment for awhile and allow the effect of the treatment to continue. Frequently the retraction and decoloration continues to take place until the scar assumes a normal and soft appearance. In the old days before diathermy and the x-ray, I have seen a keloidal cicatrix disappear under heavy static sparks and the static wave current. If at the end of a course of treatment there still remain some adhesions in or around the location of the keloid it is an excellent plan to use manual massage or the sinusoidal current to loosen up the scar tissue.

Advanced Hypernephroma Treated by Medical Diathermy

By WALTER B. WALLACE, M. D., and
G. VAN AMBER BROWN, M. D.

Detroit, Michigan

On March fifth, Mr. Mc.— was referred to the writers by Dr. Brown for treatment. The doctor asked what could be done for the patient by means of physiotherapy and was told that it did not seem that there was anything encouraging to offer. Dr. Brown, who is familiar with the treatment by diathermy, said, "Well, try! He is past surgical aid." With that understanding, electrotherapy treatment was commenced. The man had the appearance of one who was very sick, the veins of the head and face were prominent, the skin had a sickly lemon tint, he was irritable, he had dizzy attacks and had given up work some time previous to consulting Dr. Brown. In fact, his appearance was that of one in a severe toxic condition.

On simple inspection, an immense tumor of left kidney filled the whole left side of the abdomen and at its apex bulged the anterior abdominal wall markedly.

The first three treatments, using autocondensation, may be objected to on the ground of the high blood pressure being considered compensatory. However, as he was having high pressure symptoms, it was given and with beneficial results, both as to the lowering of high pressure and its symptoms.

On March 5th he received his first treatment. Previous to the treatment his blood pressure was 185 over 110. After one-half hour of autocondensation of 400 m. a. it was 160 over 90.

March 7th. The second treatment was given. Immediately previous to this treatment the systolic pressure was 175 and the diastolic was 105. The time of treatment was one-half hour of 400 m. a., and following the treatment the pressure was reduced to 160 over 95.

March 10th. Complained of severe pains in lumbar muscles of both sides and was tender to pressure in the same region.

This pain and tenderness did not seem to have any reference to the tumor mass. Before treatment the pressure was 160 over 105. Following autocondensation of one-half hour's duration of 400 m. a., the pressure was 160 systolic over 90 diastolic. After the autocondensation, he was treated with a large non-vacuum body electrode over the lumbar regions for a period of twenty minutes, which gave immediate relief.

March 12th. Patient received first diathermy treatment through left kidney tumor mass. Block tin electrodes were used for one-half hour at 1600 milliamperes.

March 14th. Diathermy was given through region of tumor for one-half hour, using 1200 milliamperes current.

March 17th. Patient complains of pain in lumbar region, also has tenderness in same location. At this time we used a non-vacuum body electrode over painful area with considerable relief. The tumor was somewhat smaller. Gave diathermy through the mass, one-half hour, using 1600 milliamperes.

March 21st. Diathermy given through mass one-half hour for 1600 Milliamperes.

March 24th. Previous to treatment blood pressure was 158 over 100. Tumor is receding in size. Diathermy was administered through growth, one hour, for 400 milliamperes. No blood was to be found in the urine at this time.

During the interval between March 24th and May 8th an acute illness leading to the death of his wife, prevented any further treatments.

Between the dates May 12th and May 26th, five treatments of diathermy were given, an average of one every three days, time varying from 40 minutes to one hour, milliamperage from 1700 to 2000.

On May 26th the blood pressure was 136 over 90.

Between the dates May 29th and June 16th, six treatments of diathermy were given, averaging a treatment every second day, time varying from 45 minutes to one hour, and the milliamperage varying from 1850 to 2350.

June 16th. No blood found in urine either macroscopically or microscopically.

Between the dates July 28th and August 27th, five treatments

of diathermy were given, with time varying from 40 minutes to one hour and the millamperage varying from 1700 to 1900.

On August 27th the treatment of diathermy was followed by one with the quartz air cooled lamp, time two minutes, target distance 40 inches, voltage 70. The radiation was made over the entire front and back of the body. The reason for using the quartz light was that I had already read an article by Dr. A. J. Pacini in which attention was called to the point that certain tumors grow less rapidly when the blood is high in calcium and low in potassium. Also it has been proven conclusively that the quartz light aids in producing an increase in cellular calcium content.

September 4th. Gave ultra-violet treatment, air cooled lamp, time 4 minutes, target distance 40 inches, voltage 70, over entire front and back of body, followed by diathermy through the mass. Time of administration was one-half hour, using 1700 milliamperes.

September 11th. Diathermy administered for one-half hour from a 1500 milliamperage current. Mass still decreasing and almost imperceptible by palpation.

September 18th. Growth is still receding in size. Diathermy applied for 45 minutes, 1700 milliamperes, followed by ultra-violet, air cooled lamp, time 4 minutes, target distance 40 inches, voltage 70, to front and back of body.

October 10th. Tumor is steadily growing smaller, diathermy used for 30 minutes at 1500 milliamperes, followed by ultra-violet, air cooled lamp, time five minutes, target distance 40 inches, voltage 70, to front and back of entire body.

November 6th. Following cystoscopy with a catheter in the left ureter, very little urine was excreted from the kidney. Phenolsulphonephthalein output from this side was in 14 minutes nil and was less than 1 per cent at end of half hour. At this time the patient was examined by several physicians, including one of the writers, and none were able, by manual examination, to find any evidence of the tumor. The x-ray showed an enlarged kidney, but no additional mass.

Conclusion

While in the diseased kidney functional end results are practically nil, the right kidney has compensated to such an extent as to give a normal urinary output as shown from time to time by a careful urinalysis. The patient has gained in weight, his cheeks are ruddy, blood pressure is down to within limits of normal and he says he feels well. He certainly looks well and for some time has been following his vocation.

This case has not been reported as a cure nor with the idea of supplanting surgery in operable cases, by diathermy, any more than we would wish to supplant surgery in a case of appendicitis. However, the object of this report is to stimulate a further trial of this treatment in inoperable cases, giving to the sufferer a chance for relief without toxemia as one of the results and without doing damage to any of the other tissues, both of which are prone to follow certain other methods of treatment, added to all of which is the hope of cure.

Coming—The October Physiotherapy Convention—Don't Miss It!

The Fourth Annual Physiotherapeutic Convention, which will be held at the Drake Hotel next October, bids fair to outclass any meeting of the kind ever before attempted. The program is shaping up in a manner that indicates the visitor will have the opportunity of hearing lectures by a combination of professional talent whose combined efforts might well produce an authoritative library of physiotherapy. There will also be a series of elaborate clinics, many demonstrations of latest developments in technic by experienced and successful physicians and surgeons. Every practising physician and surgeon will be welcome at the Convention and no effort will be spared to make his stay a pleasant and fruitful one for him. Those interested are urged to make early arrangements to be there, and to communicate with this office as to details.

Watch this Magazine for Further Announcements

Electricity in the Practice of Medicine

By WILLIAM MARTIN, M. D.

Formerly President American Electro-therapeutic Association

Many physicians who are not conversant with the uses of the various currents naturally wonder in what types of disease they are used. Many question whether there is any result therapeutically other than that which is purely psychic.

Since we have definite effects from electrical currents as shown by their physical qualities, we can hope to secure results from their use when we know these effects and the pathology upon which we are to work. We have in a general way, three important physical effects of current applications to the body—chemical, thermal, and mechanical. The first is illustrated by the constant current, as its effect is electrolytic, or, as sometimes termed, ionic. The high frequency illustrates the second, as its passage through tissues produces heat. The mechanical is best illustrated by the static. Therefore, when we have a pathology that requires certain effects such as are produced by the constant current, we naturally select that for the purpose. If hyperemia of an active nature is wanted, the high frequency current will "deliver the goods." When a mechanical effect is desired, the static currents stand out pre-eminently. We have in the latter class the faradic current, but of late years this is used for little other than nerve testing. We have modifications of all these current effects produced by the modifications of old apparatus or the production or invention of new, so that in this day of advances we have a large armamentarium which enables us to cope with many pathological conditions.

We have always been taught the value of sunlight, so now we have artificial sunlight under our absolute control as well as other forms of light, each with its own particular value.

There is no guesswork about the application of these various measures, if one is trained and skilled in their uses as well as in the pathology of disease. It is the height of absurdity for anyone to make the statement that they have psychic value only. The fact is, this plays the least part in the whole matter. No

one expects to secure cures or favorable results in every case that comes to his attention, but he does logically expect results from his scientific application of physical measures in the large variety of chronic metabolic conditions in which drugs have always failed. Here is his field of labor, and it is a large one. What is needed in this work is some knowledge and a lot of common sense.

Electricity is not a cure-all, and no sensible physician will consider it to be or advocate it in every case that comes to his notice. Drugs are not cure alls as will be conceded, therefore we must use judgment in our prescribing, using either or both as called for, and discarding either when not indicated. In prescribing electrical measures we follow along the same lines as with drugs—we use one current if it is alone indicated, or a combination of two or more if judgment so decides. This is where experience counts, and where common sense dictates.

In conclusion, the summing up of the whole matter is, that we must encourage a greater devotion to proper investigation of present-day methods of therapy, doing this with an open mind, and not be blinded by prejudice. If then, conditions warrant a use of the methods that have made their appeal, the physician must take the time necessary for acquiring an education sufficient to fit him for this particular work.

(Abstracted from New Albany Medical Herald)

Dr. Edwin E. Leman, Radium Expert, Dies

Dr. Edwin E. Leman, radium expert, died June 7, 1925, in his home at East Orange, N. J. The rays of the mineral, to the study of which he had devoted 13 years, had slowly destroyed the corpuscles of his blood.

Since 1911, when he was a senior chemistry student in the University of Chicago, Dr. Leman had been interested in penetrating the secrets of radium.

Dr. Leman was considered a leader in the field of recovering pure radium from the ore.

(From The Boston Daily Globe)

Diathermy in a Case of Apparent Middle Ear and Nerve Deafness

By SAMUEL J. RUBLEY, M. D.

Britton, Mich.

I desire to report a case now nearing completion of treatment, in the hope that this report will inspire others to efforts of a similar nature and result in an exchange of useful ideas.

Case History

American, male, 52 years old. Family history is unimportant.

Personal History—Frequent attacks of earache with purulent discharge. Usual diseases of childhood without serious sequelae. At age of 30 he had a severe attack of Iritis and Keratitis which resulted in complete blindness. Nearly all his life he has had "Nasal Catarrh," with a copious discharge. May 1924 he noticed that his hearing was beginning to fail. It had never been acute but now the deafness was so pronounced that he could not distinguish the tones of a piano. This condition progressed rapidly up to the point of where shouted voices could be heard only at 18 inches in the left ear and not at all in the right ear.

Examination

Nose—Right nares occluded by a severe septal deviation. Ulcer on left side of septum. Turbinates about normal. Eustachian tubes patent; Bellae not enlarged.

Ears—Canals free. Tympanic membranes show old perforations filled in by thin pliable scar membrane. There is marked retraction of the drums and prominence of the processus brevis. Numerous opacities in the membrane. Both malleoli firmly fixed.

Functional Examination—Bone construction is not localized to either ear. Tuning fork tests give negative results in either ear with both air conduction and bone conduction. Shouted voice heard only in left ear. Prognosis was naturally very gloomy. No help was promised.

Treatment

Surgical—Submucous resection April 13, 1925, with the usual postoperative care.

Medical—Potassium Iodide M-X, T. I. D. Intramuscular injections of Fibrolysine (Merck) every third day. General tonic measures.

Diathermy—Following a suggestion in the April number of your magazine I made ear electrodes. Daily treatments were given consisting of 350-450 m. a. for 30 minutes followed by inflation of ears and massage of drums.

Results After Three Weeks' Treatment

Left Ear—Whispered voice at three feet. Conversational voice at twelve feet plus. Malleus freely movable. Thin scar tissue is thickened and vibrates with surrounding drum membrane and whole ear drum improving. Processus brevis less prominent.

Right Ear—Malleus movable on massage. Adhesion back of drum still present. C 2 fork heard for 8 seconds when producing over tones. Spoken voices heard at four feet.

Conclusion

(1) In cases of apparent nerve deafness combined with middle ear deafness diathermy is definitely indicated.

(2) In cases of middle ear deafness the prognosis is definitely bettered by diathermy.

(3) Other treatment, both medical and surgical, must not be neglected.

(4) While diathermy must not be considered a specific, it adds a most valuable agent to our armamentarium.

An Especially Interesting Meeting for Physicians and Surgeons

Members of the Medical Profession who are interested in Diathermy will find the next regular Monthly Meeting and Clinic at 2335 Wabansia Avenue, Chicago, on Monday, August 10, of special interest. Well-known speakers—actual demonstrations.

See Back Cover for Program

Ultra Violet in Alopecia

If the hair follicles have not progressed in their atrophic change to a point beyond redemption; if *anything* at all could be made to benefit the condition, then the proper use of ultra violet will do it more certainly, quicker and safer than anything else that could be used.

The quartz ray alone will stimulate vigorous hair growth (when properly used) in many cases, but in the advanced cases other treatment is necessary to prepare the scalp for the ray. It is an unfortunate clinical fact that if a skin has been chronically inflamed long enough or has been undergoing a progressive atrophy, that after a certain stage has been reached, it is impossible to drive an actinic ray reaction through this fibrositic area. This is the reason for failure when repeated applications of actinic ray erythemas do not clear up the condition.

It is a popular fallacy that germs destroy the hair and a majority of the highly advertised "cures" stress this point. Germs seldom or never attack a healthy, fully nourished hair. When the nutrition of a hair has been cut down to a certain point the germs will get it, but if they did not it would make slight difference. It would fall out of its own accord a few months later anyway.

How can we restore vigor to a scalp, the hair of which is falling out or has already passed on? In one way only. Markedly increase its blood supply and, if necessary, as very often is the case, increase the quality of the blood supplied. For both these purposes there has never been known anything that could fairly be compared to the ultra violet ray. *Locally*, you may safely, and with positive benefit to the skin, produce many times as intense an erythema as you dare to try to produce with heat, mechanotherapy, chemotherapy, x-ray or any other form of erythema producing agency and the more intense the actinic erythema and the more often it is produced, the more beneficial it is. So far from damaging the skin, it does the very opposite. It raises the resistance of the skin to *all* sorts of irritants including violent chemical irritants and the x-ray.

Generally, (that is for the so-called tonic effects) for the pur-

pose of raising the reactivity of the blood, raising its resistivity and giving it its highest value as a nutritive medium, the general application of the ultra violet ray produces such prompt and marked increase in these qualities that it is positively unfair to the ray to compare the best possible chemical "tonic" to it. They are not even in the same general class.

Now, let us take an advanced case of alopecia and follow through its treatment. Less advanced cases might not require the preliminary treatment, but even these cases would benefit markedly if subjected to the whole routine. Advanced cases may not respond when it is used but if they do not the only place the recipient is ever going to get hair upon his head is at the toupee makers. First, it is up to us to break up and remove as much as possible of the fibrositic (or atrophic) changes in the scalp. Intense heat from the 1500 watt therapy lamp all over the affected area for twenty or thirty minutes, followed immediately by some form of mechanotherapy, such as vigorous massage, rolling and pinching the scalp or lateral vibration (that is, with a vibrator having a lateral movement and not a concussion stroke) should be used every day for some weeks.

Then, once a week spray an ionizing dose of *soft* x-ray (5 milliamperes minutes of a 4½-inch back-up-spark x-ray, at an 8-inch target skin distance through one millimeter of aluminum filter) over the affected area. Not more than a five-inch back-up-spark is wanted or must be used. To save time this ionizing dose of x-ray can be administered every other day for the first three (3) doses only, and then once a week thereafter.

After some weeks of this preliminary treatment, the scalp is ready for and will react much better to the ultra violet ray. Shave or clip the hair very close and give a heavy third degree dermatitis reaction over the scalp with an air cooled ultra violet lamp. (A third degree actinic ray reaction is as violent a reaction as can be produced and not blister.) The amount of exposure necessary to produce this reaction will vary with different lamps, voltages, age of burner, etc., but as we want to produce extreme stimulation we should use a short target-skin distance—eight or ten inches from burner to skin. Let this reaction come up to its height and recede and then repeat the

third degree ultra violet reaction at intervals of ten days or so apart for two or three more reactions. If this course of treatment will not grow hair then nothing else has a chance. Lighter doses of the ultra violet, of course, will stimulate hair growth in many cases but the treatment outlined is for a stubborn case.

(From *The Quartz Lamp*, May, 1925)

The Book Which Has Superseded all Others In Its Class

HIGH FREQUENCY PRACTICE

BY BURTON BAKER GROVER, M. D.

Profusely Illustrated—About 400 Pages Extra Cloth, \$4.00, Postpaid

There is no other means at the command of the physician so potent in correcting deranged metabolism as the high-frequency current.

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Grover's High Frequency Practice	\$ 4.00
Grover's Blood Pressure and Key	3.00
Stewart's Diathermy in Pneumonia	3.00
Medical Herald and Therapist for 6 months	1.00

\$11.00

These Three Books, Postpaid, and the Magazine for 6 Months for \$7.00

Supplied by H. G. Fischer & Company
2335 Wabansia Avenue
Chicago, Illinois

A Price Correction on the Type "G" Hospital Unit

An error in the printing of the advertisement of Type "G" Hospital Portable Diathermy Unit, in *Fischer's Magazine* for June, has caused some misunderstanding. To clear this up, we submit herewith the correct prices of the Type "G" Unit and the Hospital Cart:

No. 1250, Type "G" Hospital Portable Diathermy Unit, without accessories or cart	\$250.00
No. 1251, as above, complete with accessories but without cart	275.00
No. 1255, Hospital Cart	40.00

The Treatment of Carbuncles by Electrocoagulation

By A. DAVID WILLMOTH, M. D.

Louisville, Kentucky

Having had extensive experience with the D'Arsonval bipolar current in the treatment of cancer cases, its use in carbuncles naturally suggested itself. The work could be done without anesthesia, as a rule, save hyoscine, morphine and cactin; there was no cutting operation, hence no bleeding to staunch; no shock; and a shorter stay in the hospital. The further advantages were: no hot cauteries to handle, or to cool down while in use, the heat and destruction of tissue being entirely under the control of the operator at all times. Any amount of tissue destruction can be had, depending on the amount of current used and the length of time of its application.

When it is definitely determined that a carbuncle is present, it is the proper time to institute radical measures for its immediate relief. Like acute appendicitis, the time to operate is when the patient is first seen, as the work will be less then and the patient's chances better than at any later period.

Technic of Electrocoagulation

The technic is as follows: Assuming that, for some reason or reasons, the patient should not, or will not, take either a local or general anesthetic, and the amount of tissue destruction is not too great, the area involved can be anesthetized by using the same type of current as will be used in operating. Attach the indifferent electrode of the high-frequency machine to any part of the patient's body that is most convenient; or, what is a very good method, use the autocondensation handle and attach the indifferent cord from the machine to this and tell the patient to grasp it with both hands, not so tightly as to cramp the hands, but firmly. This will give the patient something to do with his hands and prevent his taking hold of you, and is an easy way to make the desired connection.

To the other cord of the machine is attached the handle of the

active electrode which is to be used with the needle point in destroying the pathology. Start with a very light current—just enough to make the so-called “feather spark”—allowing this to come in contact with the skin about one-fourth inch or little more from the margin of the area to be destroyed. By passing this in a circular manner around the carbuncle for three to five minutes and having your assistant gradually increase the spark up to the point of tolerance, and at the same time increasing the speed of revolutions, the entire area will be numbed, and, without telling the patient, the needle is pushed into the infected tissue as deep as is necessary to reach the deepest points of infection and allowed to remain there, increasing the current if needed until the tissue is blanched white. The amount of current will usually be about 250 to 500 milliamperes and the time 20 to 30 seconds.

When the tissues become white, the needle is removed and inserted into another adjoining area and the current applied by the foot switch until the tissue is again blanched. By repeating this procedure, the entire pathology can, in a few minutes, be entirely destroyed and only healthy tissue remain. When all infected tissue is coagulated, the major portion can be removed at once with a large spoon curette, leaving only a healthy base. Any bleeding points are controlled by allowing the current to arc for half-inch spark distance, when all bleeding will instantly stop. The wound is now clean and ready to be dressed with plain sterile gauze. Pain will not be experienced after the treatment is over, for the reason that small terminal nerve endings are obtunded by the current.

Severe Cases

If much destruction is going to be needed, the patient should be in a hospital and given a full strength hyoscine, morphine and cactin tablet two and one-half hours before the time of the expected operation. This should be further augmented by the half strength tablet of the same, one-half hour preceding the operation.

The patients usually come to the operating table either in profound sleep or, if not, in that state of “twilight sleep” where

they can converse with you, while experiencing no pain, nor remembering anything that happened at the time.

Where an ether anesthesia is used, great care must be exercised to prevent explosion by getting the ether can at safe distance before the treatment is begun. If the operation is about the face or neck, time must also be allowed to get the ether vapor out of the patient's lungs and, as a further precaution, lay a wet towel or gauze over patient's face during the time the current is on. The operator can control any of these dangers, if experienced in the use of the current, by not allowing any sparking to occur on the surface. This is done by keeping the needle in the tissue during the entire time the current is on, and by keeping the needle clean and free from charred accumulations at the tip that is exposed for the first inch or two for contact. No sparking can occur from the portion of needle that is covered by the rubber tubing and away from the tissues.

These cases, being more extensive, will require from 750 to 1250 milliamperes of current to work fast and avoid any hemorrhage, and should have the indifferent electrode applied to some portion of the body, either the thigh, back or abdomen.

This indifferent electrode should be of block tin, 6 by 8 inches in dimensions, and must always have round corners. It should be thoroughly soaped and should be maintained in direct contact either by an assistant holding it firmly against the skin or bandages or sandbags may be used to maintain the contact. Perfect contact must be kept up at all times, else a burn will be produced by the current arcing across from the tin plate when the current is on. The operator should always use a foot switch so that he may be in perfect control of the current at all times. This insures instant application and likewise instant breaking of the contact when necessary.

The machine should be grounded to a cold water-pipe to take care of any stray currents. Remember, you are using a current of potential danger, both in volts and milliamperes.

If the slough that is going to occur produces much odor, this can easily be cared for by the application of powdered sugar to the wound. The sugar should be moistened enough to form a paste and spread on gauze large enough to cover the wound.

The paste should be spread on sufficiently thick to make a smooth dressing when applied, and placed in direct contact with the wound. This dressing can be used exclusively if desired, or an oil dressing can be substituted when the wound has become perfectly clean and free from odor. The separation of the slough can be hastened by the use of pepsin which will rapidly digest out all tissue destroyed by the current, leaving a clean, granulating wound.

The electrocoagulation of these conditions is not only more rapid but much safer than surgical removal, there being no bleeding to annoy or cause shock. It seals all lymphatics, thereby preventing any further danger from metastasis; is painless after the work is done; has no mortality from shock of operation and leaves a smaller and more pliable scar. The scar can further be lessened and the healing process made more rapid by the use of the water-cooled ultra-violet lamp one to two minutes each day, with open lamp at six-inch distance. The use of peroxide to cleanse the wound will not only favor the cleansing process but will act as a photosensitive agent enhancing the therapeutic action of the lamp.

A word of caution should be given in those cases where local anesthesia is used. Remember tissues infiltrated with fluid generate heat much more rapidly than normal tissues. At least one-third less current and time must be used, or else, by the generation of steam, a much wider destruction will take place than was intended.

Electrocoagulation in carbuncles so far surpasses the old treatment of knife or cautery as to make them obsolete.

(Extracted from Clinical Medicine, May, 1925)

An Acknowledgment

Credit for the excellent article on "Physiotherapy Now an Established Part of the Hospital," published in Fischer's Magazine for May, should have been given to the author, Arthur E. Schiller, M. D., 1207 Kresge Building, Detroit, Mich.

It gives us great pleasure to make this correction at this time, for we feel that Dr. Schiller's name adds weight to the statements which we were glad to endorse by publishing them.

Electro-Coagulation of Epithelioma

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

T. E., Neosho, Missouri, age 50 years, (Fig. 1). Epithelioma of lower lip produced by smoking. Seven months' duration. This was removed by electro-coagulation with the perfect results shown in Fig. 2.

The diathermy machine was set to deliver between 2000 and 2500 M. A. of current at lowest tension. By this, I mean that the meter registered that amount when the two electrodes were in contact. For the active electrode I used a needle from the standard operating set, while for the inactive electrode, I employed a large piece of block tin, 5x12 inches in size, which was placed against the back, the upper edge extending above the patient's collar. No soap-lather was used to insure contact.

The lip was anesthetized by two per cent novocain-adrenalin solution. Using the foot-switch and the pointed electrode the current was applied at various points on the lip until the entire malignant process was dessicated. (You will note that the healed scar extends across two-thirds of the lip.)

The slough came away after five days and the lip was healed in three weeks' time. A series of x-ray treatments were given over the cervical region to prevent the possibility of metastasis.

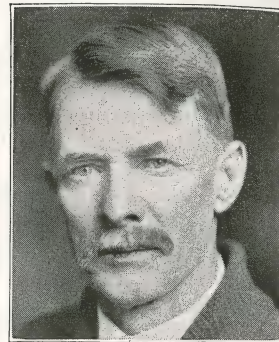


Fig. 1

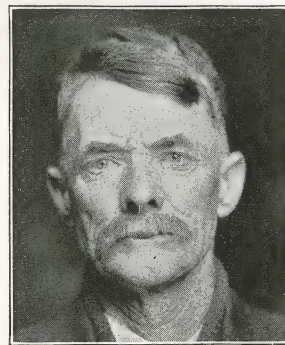


Fig. 2

Physiotherapy in the Treatment of Industrial Injuries

By GUY E. BARR, M. D.

Sioux City, Iowa

The treatment of industrial disabilities has become an important and vital factor in the health and prosperity of the general public. It concerns not only those who are actually disabled, but those who are dependent on the product of their labor. Any means, therefore, which is conducive to the conservation of the health and physical fitness of the individual so that he may do his part and do it well, is certainly deserving of our utmost efforts.

Physiotherapy, as imbedded in the use of electricity, light, x-rays, heat, cold, water, massage, and exercise, offers us a powerful armamentarium of therapeutic value, and to achieve the greatest measure of successful results our equipment must include several, if not all, of those means for producing the desired mechanical, chemical and heat or thermal effects.

Mechanical action is produced by the interrupted galvanic, the plain or interrupted faradic, the sinusoidal and static wave currents, or the high potential resonator discharges; also by vibration, massage, and exercise. These various agents have their particular indications for use, being stimulating, reconstructive, and eliminative in their effects.

No injury, whether traumatic, chemical, thermic, or bacterial, can be recovered from except through the agency of heat, whether the heat originates within the system or is induced by external agents.

Diathermy is a physiological agent. It increases the temperature of the tissues themselves, it dilates the blood vessels by direct influence, and increases the supply of the area treated, and thereby quickens the chemical processes of metabolism, and thus aids nature in making a cure. It relieves pain and tenderness by relieving pressure from exudates. It softens tissues making them better conductors of low frequency currents and

more susceptible to mechanical treatments such as vibration and massage.

Sprains and contusions with their attendant congestion, swelling, and local rise of temperature, are treated with the most gratifying results with diathermy, heat, massage, and exercise. The early treatment of sprains with diathermy, resulting in the relief of pain and prevention or removal of stasis, is one of the noteworthy achievements of this valuable agency. The daily treatment of these cases is followed by rapid restoration to normal function, and the patient may meanwhile pursue his accustomed activities.

Dislocations

Massage and exercises should be started at once after reduction, under the care of the surgeon. In fact, all joint motions in a recently reduced dislocation should be done by the surgeon himself, after baking and massage of the injured joint. The greatest care is essential lest the dislocation recur; therefore, motion should be gradual and not at too great an angle before a week or ten days have passed. The function of a joint is motion and a joint not moved will become stiff; also, the muscles moving the joint are usually supplied by the same nerves as the joint itself, and there is a reflex atrophy of these muscles. This can only be prevented by massage, electric stimulation and proper motion. This is especially important in the shoulder joint, as the stability of that joint is dependent upon the surrounding muscle tone.

Stiff and painful shoulders, uncomplicated by calcified bursæ, are best treated by some combination of radiant light, diathermy, sod. chloride ionization, sinusoidal currents, and massage.

Ankylosis of Joints

In all treatment of stiff joints, cases of bony ankylosis and those cases where there is some contra-indication by a pathological process, such as tuberculosis, should be excluded; where there is a bony obstacle it is useless to attempt, without surgery, to gain motion beyond the bony blocking. So we have to treat by physiotherapy stiffness caused by adhesions inside or out-

side the joint, by inflammatory changes or by reaction of scar tissue.

Fractures

For fractures, our therapy is after reduction: first, radiant light for the production of active hyperemia; second, diathermy for hastening callus formation; third, gentle massage for its circulatory effect. Where there is a slight nerve involvement, the Bristow coil or the slow sinusoidal current applied over the motor points with gentle contraction are also a help in retarding or preventing atrophy.

Arthritis and synovitis, and other joint and bone conditions, are quickly relieved and permanently improved by the use of the remedies which produce heat and mechanical effects.

Inflammation of the muscles and tendons produced by strains and direct violence are very promptly relieved by radiant light, diathermy, and surface electrodes. Follow this up by static wave currents or sparks, or the slow sinusoidal current and you will get very rapid and satisfactory results.

The restoring of active circulation and improvement in the nutrition of muscles and the relief of pain and inflammation in the early stages of nerve injuries, with their resulting paralysis, is best secured by the combined treatment of baths, massage, suitable forms of electricity and exercise.

Amputations

Physiotherapy is of great assistance in relieving edema, hastening the shrinking of the stump, stretching contractions, hardening the stump to make it weight bearing, and restoring muscular tone.

Muscular Atrophy Following Injury

Anything that will promote the nutritive changes in the muscle is indicated and in physiotherapy modalities we have by far the best and most efficient means of attack against this trouble. All treatment should be preceded by the thorough warming or heating of the part by radiant light and diathermy, then the Bristow coil or sinusoidal current, followed by massage and exercise. Muscles which show the reaction of degeneration do not

respond to the faradic current, in which case it becomes necessary to employ the interrupted galvanic, the rhythm of which must be regular, with a period of rest. The sensation of pain produced by electrical currents depends upon the height of the current wave, the higher and longer the wave the greater degree of pain. Care should be taken not to tire or tetanize the muscle.

Burns

Radiant light and actinic light relieve pain, stimulate the quick healing process, and are bactericidal, and under this treatment burns will invariably heal without any subsequent infection. For x-ray burns no agent known today can compare with actinic light, either preceded or followed by radiant light.

Infections

Superficial types of infections are very successfully treated by radiant light and heat, combined with actinic light. You will be agreeably surprised to find how quickly these infections and ulcerative conditions will respond to this treatment. I do not use very much of the so-called antiseptics, but am depending more and more upon the use of radiant light and actinic light to control infections and injuries and find I get much better and quicker results than can be obtained by any other method.

Bruises

From a medical standpoint every bruise should be regarded as serious, and every effort made to restore normal circulation at the earliest possible moment. So I repeat: treat all mild bruises as if serious consequences are to be expected; apply radiant light and heat, diathermy, actinic light, or vacuum electrodes as soon as possible after the trauma.

Back and Sacro-Iliac Strains

Probably the greatest number of cases are the back strains and sacro-iliac conditions, where the muscles and ligaments have been stretched, torn, or bruised, with possibly a slight rotation of the lumbar vertebrae. These cases often cause the most prolonged disability and should be given attention immediately, as the longer physiotherapy is withheld from these cases the harder

they are to treat, and they often lose weeks and months from work which is unnecessary.

Proper manipulation, and in obstinate cases stretching by traction tables, and the application of radiant light and diathermy, followed by galvanism, give wonderfully rapid and permanent results.

Conclusions

Statistics gathered by some of the foremost authorities and verified in my own practice to my satisfaction, prove that physiotherapy applied to industrial injury cases—

First, reduces the period of disability 30 to 40 per cent, in some cases more.

Second, reduces the amount of total disability 30 per cent or more.

Third, conserves labor by putting the man back on the job in a shorter period of time.

Fourth, restores the injured skilled employee to his maximum working efficiency, thus keeping production up to the highest possible point.

Fifth, creates good will of the employee.

I sincerely hope that more use of physiotherapy methods will be made by the physicians in these cases.

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- Magnusen and Coulter: Industrial Clinics.
McFee, Wm. D.: Journal Electrotherapy & Radiology, 1921.
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Granger, Frank: American Journal Electrotherapy & Radiology, 1921; Grover's Electrotherapy Practice.

(From the Journal-Lancet)

Applying Electrodes to the Back

When applying diathermy electrodes to a hollow back, a rubber water bottle partly filled with water will be found of the utmost value.

Just place the bottle between the table and the metal electrode—whether it be sheet block tin or of mesh material. The water in the bottle will adapt itself instantly to the curves of the body and ensure firm contact at all points. This is a very practical method.

Physiological Effects of Electricity

By WILLIAM L. CLARK, M. D.

Electricity, though always the same force, is manifested in many ways, and when modified and applied with knowledge, intelligence and skill, may be made to produce different physiological effects. It is upon this variability that the whole superstructure of electrotherapeutics rests. The known effects produced by electricity may be classified as follows: 1, mechanical; 2, electrolytic or chemical; 3, thermic; 4, counterirritant; 5, actinic; 6, psychical. These effects may be postulated, and it requires but simple logical deduction to reveal their application to rational therapeutics.

Mechanical

Mechanical contraction of nerves, muscles, ligaments, and viscera may be produced by the interrupted galvanic, the plain or interrupted faradic, the sinusoidal, the static wave, static sparks, static induced current, and the high-frequency resonator discharge. These contractions may be general or local, slow or rapid, superficial or deep, irregular or so rhythmical that they may be made exactly to synchronize with the heart beat. The correct employment of electrical contractions, alternating with relaxations, accomplishes exercise without fatigue, with the incidental stimulating, developmental, eliminative and metabolic effects. All these currents have some particular indications, although there are conditions in which they may be used interchangeably or in combination.

Electrolytic or Chemical

The *electrolytic* or *chemical* action of the galvanic current is utilized to advantage in medicine, and offers a fruitful field for future research work. The destruction of growths and treatment of hypertrichosis by electrolysis is well known. By a method known as ionic medication, various drugs may be introduced into the tissues. Copper, zinc, silver, mercury, magnesium and other metals may be separated from their salts and driven into the tissues from the anode, as may cocaine, mor-

phine and aconite. Iodine, the salicylates, and other useful drugs are driven in from the cathode. The advantage of ionic medication over introduction of the drug through the alimentary tract is that the direct application of drugs insures a maximum effect, while, when introduced by the stomach, chemical changes and distribution of action may materially lessen the local potency of the remedial agent. The opposite poles have opposite chemical reactions, the positive being acid in reaction, while the negative is alkaline; the positive contracts, the negative dilates; the positive is sedative, the negative is stimulating.

Thermic

Heating of tissue is produced by the various forms of high-frequency currents and from carbon, tungsten and nitrogen electric lamps. The effect produced by a high-frequency current may range from a slight irritation of the skin and the production of a simple hyperemia to coagulation, desiccation or incineration. The action may be localized in one area or generalized over the surface of the whole body. The current may penetrate the body at given points; a joint may be heated, as may the liver, lung, kidney, or, indeed, any organ. This heat may also be distributed equally through every portion of the organism with a consequent elevation of the body temperature. The heat from electric therapeutic lamps, as far as is known, is comparatively superficial, although the lamps furnish a convenient method of applying surface heat, and are of undoubted value.

Counterirritant

All degrees of *counterirritation* may be produced by the application to the skin of the galvanic and high-frequency currents, the static brush discharge, heat from therapeutic lamps, and the ultraviolet rays. The counterirritation from the ultraviolet rays is more lasting in effect than that obtained by the other method.

Actinic

Actinic effects are produced by some of the spectral and extraspectral rays generated by electrical currents. Blue rays are known to be sedative and red rays stimulating. The action of

the other spectral rays is not so well determined. Very little is known of the action of infrared except that of heat. The ultraviolet rays are strongly actinic and are bactericidal in action to a marked degree, very stimulating and irritating, even to the point of producing the destruction of superficial tissue. Under modifications of application, consisting of filtration of irritating wave lengths—red, yellow and green—by interposing cobalt blue ultraviolet glass, and compression of tissue for the purpose of producing ischemia by quartz lenses while the rays are passing through, these rays may be made less irritating. The rays cannot penetrate any substance colored red, hence the necessity of producing a temporary ischemia to insure penetration by the rays. Under ischemia, the penetration is from one to four millimeters. The ultra-violet rays may be used with success in some skin lesions and in such systematic conditions as are benefited by sunlight. The X-ray and radium are usually associated with electrotherapeutics, but because of the wealth of literature upon this subject, they will not be discussed here.

Psychical Influence

The beneficial *psychical* influence of electricity upon some impressionable patients is undoubted, and is welcomed in the treatment of such conditions as hysteria and hypochondriasis, but this is the least of the beneficial effects of electricity, and not the greatest, as some of us have been taught to believe. There is an influence aside from the psychical one. It may be safely asserted that the individual who comes in contact with a live wire does not die from the psychical effect; conversely the therapeutical application of a selected current benefits the recipient.

Electro-diagnosis and Prognosis

The value of the galvanic and faradic currents and the more recently studied condenser discharges for nerve and muscle testing in peripheral and in some central nerve lesions for the determination of changes in electrical response leading to the reaction of degeneration is proven, and the method should be in more general use by the profession, as often a diagnosis and

prognosis may be given promptly, malingerers exposed, guess-work eliminated, and reputations for ability enhanced.

Resume

Electro-therapeutics should be studied from the standpoint of cause and effect rather than by outline of indications. Success depends upon an adequate knowledge of physiology and pathology as related to the human body; upon a mastery of the laws that govern electricity; upon the possession of efficient apparatus, the achievement of good technic by practice, and the good judgment to apply all these acquirements to the best advantage.

Electro-therapeutics is not a system to be used to the exclusion of other therapeutic measures, but is a worthy additional unit to any physician's armamentarium. Competence in this as well as in other methods of physical therapy will do much to discourage irregular practitioners who are thriving on charlatanism.

(Abstracted from "True and False Teaching in Applied Electricity," in *Medical Council*.)

Fulguration of Hunner Ulcers

H. Dawson Furniss, *American Journal of Obstetrics and Gynecology*, March, 1924, concludes as follows: (1) All possible foci of infection should be removed. (2) Resection is a formidable operation with at times spectacular and at times dismal failures. (3) Fulguration is a simpler method of dealing with the problem and should be tried first. (4) The results are frequently most gratifying. At least, temporary relief can be counted upon, and if there is recurrence the ulcer can be fulgurated again. The willingness of the patients to submit to second and third fulgurations is a convincing testimonial of the relief they receive. (5) Until something better is discovered fulguration should be continued. (6) The greatest relief and best looking bladders are those in which fulguration was the most thorough, and performed under sacral anesthesia through the air distended bladder. (7) With increased experience and perfection of the technic even more satisfactory results may be anticipated.

Diathermy in Cardiovascular Disease

By FRANK THOMAS WOODBURY, M.D.

New York

May I invite attention to an error of assumption in the otherwise excellent paper of Dr. Last on the Use of Diathermy in Cardiovascular Diseases, published in your issue of Feb., 1925?

In two places he speaks of the blood as being more heated than the rest of the tissues by diathermy and speaks of auxillary temperature being higher than rectal in general diathermy as a proof. First, high potential currents pass through substances resistant to low voltage currents. Then Joule's law cannot be set aside even in living tissue. The heat generated is always proportional to the resistance of the circuit; hence bone will heat up more than muscle and muscle than blood. The heat generated is equal to the square of the amperage, double the amperage and you quadruple the heat, and the heat generated is proportional to the time of current flow.

If the two terminals of the d'Arsonval or Tesla coils be attached to electrodes on separate ankles, a thermometer in the rectum will show a decided rise in temperature.

The reason the blood is hot is because it is draining a heated area, just as water from a boiler is hot (it is conducted heat), and so it circulates giving off its heat by radiation through evaporation of perspiration and lung vapor and by conduction to other organs. If the blood did not circulate through the heated area the tissues would remain hot and be damaged. For this reason diathermy in scar and fibrotic tissue which has poor circulation that cannot be increased, and in anesthetic areas where reflex hyperemia cannot be excited, is to be used with extreme caution and in small doses. The greatest heat in Dr. Last's technic would be near the back. The relief of tension is evidently due to the relief of spasm of the vasa vasorum which may result from the same cause or the analgesia or may be due to the effects of heat.

(From *Med. Jour. and Rec.*)

Diathermy Treatment of a Complicated G. U. Case

By A. N. TREADGOLD, M. D.
Detroit, Mich.

Patient had the following history: Twelve years ago, following a case of gonorrhea, a double stricture occurred. Patient was operated, had it incised, and following the operation, was unable to pass his urine, having to have it drawn. Later this could not be done and the bladder was punctured (trocarized). Two years later he was in John Hopkins Hospital and had another operation. Results, able to urinate only by small spurts. Went to a Genu man and had him force a small sound under an anesthetic. Result unsatisfactory. Patient's condition grew gradually worse, necessitating the wearing of a urinal pouch and an oilcloth or rubber pad on his bed.

When I saw him first, December 23, 1924, he had epididymitis, right testicle swollen five times its natural size with marked tenderness. Urine was loaded with bacteria. Bladder distended due to retention of urine; mucopurulent discharge.

Treatment: Glass urethral electrode was passed into the urethra to the seat of the first stricture. 200 M. A. was gradually increased to 400 for first six treatments. Then gradually increased to 800. Mesh electrode applied to the scrotum and the rectal electrode to the prostate gland via rectum.

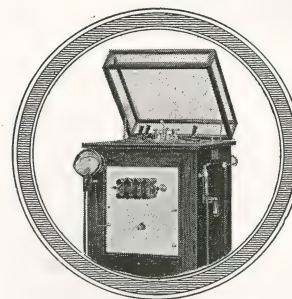
In treating the prostate I connected one pole of diathermy to the autocondensation pole and, of course, the high-frequency to the rectal electrode. In this way I learned that I could get much better heating of the gland with less discomfort to the patient.

This patient is now a well man. Has perfect control of his bladder, and his sexual powers are now perfectly normal. Can pass a No. 17 sound easily.

Contraindications to Diathermy

Where there is a walled-off abscess within the pelvis, such as an old pyosalpinx, diathermy should not be used as it causes these to break down and rupture internally.—*W. B. Chapman, M. D.*

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Apparatus

For Every Diathermy Need

FROM finger infection to carcinoma—from a simple bruise to lobar pneumonia—this newest Fischer Diathermy Outfit meets every diathermy requirement of the physician and the surgeon.

The convenience thus afforded, in making it possible to prescribe and administer the correct treatment from one machine, is of infinite value to the busy medical man. And his is the satisfaction, too, of knowing his apparatus is wholly dependable under every condition of use.

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A PAGE OF FUN

"Before we were married George used to kiss me when we went through tunnels."

"And now?"

"Now he takes a drink."

□ □ □

"Jones," ordered the farmer, "all the clocks in the house have run down, wish you'd hitch up and ride down to the junction and find out what time it is."

"I ain't got a watch. Will you lend me one?"

"Watch—watch! What d'ye want a watch fer? Write it down on a piece of paper!"

□ □ □

Kindly Old Lady: "You say you've been on the force eight years? Why haven't you some service stripes on your sleeve?"

Cop: "I don't wear them. They chafe my nose."

Daughter: "I bet, dad, you never saw swell dancing like this back in your days."

Dad: "Yes, I did, often—but the place was raided before 10 o'clock."

□ □ □

Doctor: "You have acute appendicitis."

Fair Patient: "Oh, doctor, don't flatter me."—L. A. Times.

□ □ □

He—"I had a good joke to tell you this evening, but I see you are not in a condition to hear it."

She—"Why?"

He—"Because if your face lights up the powder will go off."

□ □ □

Fond Mother: "Yes, Genevieve is studying French and algebra. Say 'good morning' to the lady in algebra, Genevieve."



This young man asked the young lady to take a walk with him and pick flowers. The young lady's little brother decided to come along. So they picked flowers.

Last Call for the July Meeting and Clinic for Physicians and Surgeons

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 3:30 P. M.

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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Program for Our
**Monthly Physiotherapeutic
Meeting**

Monday, September 14, 1925

- EMILE C. DUVAL, M. D., Chicago, Ill.**
"Indications for Diathermy" 10:00 to 11:00 A. M.
- A. R. HOLLENDER, M. D., Chicago, Ill.**
"Light Therapy in Otitis Media" 11:00 to 12:00 A. M.
- EMILE C. DUVAL, M. D., Chicago, Ill.**
"A Scientific Basis for Diathermy Technic" 1:30 to 2:30 P. M.
- M. H. COTTLE, M. D., Chicago, Ill.**
"Indications for Diathermy in Eye, Ear, Nose
and Throat Diseases" 2:30 to 3:30 P. M.

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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.

Ample lecture-hall facilities have been provided, and visiting physicians and surgeons are assured of proper facilities for getting the most out of this splendid program. There is, of course, no fee—just come to the main office and accommodations will be provided for you.

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FISCHER'S MAGAZINE



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371

AUGUST, 1925

PRICE

ALL WORKS OF QUALITY
MUST BEAR A PRICE
IN PROPORTION TO THE
SKILL, TIME, EXPENSE AND
RISK ATTENDING THEIR
INVENTION AND MANU-
FACTURE—THOSE THINGS
CALLED DEAR ARE, WHEN
JUSTLY ESTIMATED, THE
CHEAPEST.

—RUSKIN

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.

AUGUST, 1925

No. 8

Physiotherapy in Renal Disease

By CURRAN POPE, M. D.

Medical Director The Pope Sanatorium and President American
College of Radiology and Physiotherapy

Louisville, Ky.

A proper mental attitude on the part of the physician is of inestimable advantage to the patient suffering from nephritis, for it leads the practitioner to active interference, not alone to check the pathology present and save uninvolved tissue, but to make strenuous efforts to bring about a *restitutio ad integrum* of the tissue involved. Nor must one focus his attention on the kidney alone, for a general view taken of the patient as a whole will oftentimes change our outlook in such cases.

It is to be regretted that in this class of cases so few measures are employed to relieve the trouble. There is a tendency in the subacute and subchronic cases to put a patient to bed, strictly at rest upon a diet, and carefully limit and restrict the intake of food, especially protein. This can be easily overdone. In those who habitually overeat, and eat highly seasoned and overstimulating food, the change to plain, simple well cooked food, lessened in quantity, may be all that is necessary to check the progress of the disease. If a strict diet is essential it has always been my principle to just as rapidly as possible get the sufferer back upon the maximum tolerable diet of proper food stuffs.

Again it must be borne in mind that it is not necessary to "wash the kidneys out" by free water drinking. The influence of water upon the economy and upon a kidney struggling with

its own disease, becomes a problem that a physician only can and must try. The modern tests of the kidney by water ingestion will give much useful information that can be practically applied to a given case.

Rest is essential but this does not of necessity mean in bed. It can oftentimes be better accomplished by late rising, early retiring and lessened exertion in the interim. Rest should not be limited to the body alone but wherever possible a wholesome mental rest must be secured. This may be obtained in active and busy men and women by changing the kind of mental activity. Gentle exercise combined with a maximum of fresh air can be obtained from sensible motoring for a short time followed by a complete rest in bed or on a lounge for an hour or two.

Medication requires judgment and must be used to suit each case. My personal predilection is for as little medication as possible. I have seen alkalination help; also the use of some of the glandular products, especially nephritin. Watching the renal elimination, keeping a close eye on the cardiac apparatus and skin, will enable one to meet the needed requirements of chemical treatment. Any underlying infection such as syphilis must be noted and treatment instituted, but not in my opinion by the salvarsans. Careful tentative use of hydrargyrum and bismuth is better than arsenic. All focal infection must be removed and promptly treated, and it is not an unusual thing to see prompt betterment after a focus has been cleared. But I here protest again against the useless, wasteful and often needless sacrifices upon the altar of feticism, by the reckless removal of teeth and tonsils. Some should be removed; that is true. But remember that store teeth are poor substitutes for the ones grown by natural processes and that the removal of teeth may be the beginning of gastro-intestinal disorders that may in themselves produce such a disturbance as will not only aggravate but terminate a kidney case.

Renal cases as a rule are benefited by colon drainage or lavage, and by this I do not mean enemas, high or low, but real cleansing of the colon by many gallons of water followed by proper treatment or by the implantation of "friendly" bacteria. It is astonishing how some cases clear up under this form of

treatment. Like everything else in medicine it requires care and judgment in its use and an adaptation to the particular case in hand. That the colon is a cloaca from which come many poisons cannot be denied, and that it is the cause or basic factor in many others will be readily admitted by those who are really familiar with the subject.

It is really astonishing how few men employ other measures than those heretofore enumerated and yet in the domain of physical therapy there are many modalities that aid, not alone in restoring the diseased kidney, but in relieving underlying and contributing factors of a case. At the head of these modalities I place hydrotherapy and static electricity. The use of baths, except in sanatoria and at springs, is rarely employed. In the acute, subacute and chronic cases they have a powerful effect. In bedridden cases, use the *fomentation* (130-140° F.); should be applied over the kidney for twenty minutes every three hours. Diaphoresis may be obtained by the electric light bath prior to the use of the fomentation and followed by a blanket pack for one hour. There is an intimate reciprocal action between skin and kidney, and though diaphoresis stimulates the compensatory activity of the skin, it is not for its eliminant action alone that it is used, for its eliminant power is limited. It also stimulates other organs to act.

Another method is the *full hot bath* at 100-110° F. for twenty to forty minutes. This is especially valuable procedure with children, when followed by the full dry pack for three-quarters of an hour. To both of these measures should be added gentle friction of the skin, to maintain the skin circulation.

In ambulant cases the *hot air, incandescent electric light or superheated dry hot air baths* are valuable. The electric light bath is the most valuable. These methods divert the blood in the internal organs to the skin like a great suction pump, relieving intra-abdomino-renal pressure and congestion, thus enabling these organs to function better. Care must be exercised to prevent chilling. Cerebral complications are best met by *cold cephalic compress* or *ice cap*. In chronic cases a preliminary heating to moderate perspiration by the *incandescent electric*

light bath, followed by the full wet pack at 90° F. for 20 minutes, decreasing temperature 5° F. daily to 70° F. and increasing the time to one hour. Or, the *light bath* may be followed by the dripping sheet, rain, shower, spray or douche bath, graduating the temperature, pressure and duration to suit the case. The *Nauheim* or CO₂ bath is very valuable in these cases, helping both kidney and heart.

I have seen the *Static* clear up a kidney when everything else had failed. Commencing with light and short treatments it should be rapidly increased to as strong as can be borne, finally using heavy indirect sparks to the entire spine, over the kidney region and liver, followed by the *Wave Current*, using a condenser and applying the electrode over the kidney region. I have on a number of occasions examined the urine following these applications and found at the start an increase of casts and renal cells, rarely an increase in albumen, to be followed later by a cleaning urine and clinical betterment of the case.

Diathermy is a valuable method in these cases. In the acute case in bed we should use smaller amperage and shorter duration of treatment and if necessary give the treatment twice daily. In the convalescent or ambulant patient heavy doses are indicated. I prefer a dosage of 1000-1500 milliamperes for 10-15-20 minutes rather than a much longer time at a lower milliamperage.

Actinic Light, the air cooled lamp, may be used for its general vitalizing and "fixing" purposes. In fact every method that increases the general health is of value insofar as the local inflammation is concerned. It should be applied to the entire body surface, anterior and posterior.

Sinusoidalization, by means of the Morse Wave Generator, is most valuable in overcoming the constipation and intestinal stasis present. These are cases in which it is desirable to avoid, if possible, the use of cathartics and laxatives. Diet, exercises of the abdomen and the sine wave are the preferred measures. Place one electrode on the lower abdomen and the other crosswise of the spine just under the shoulder blades (7-10 dorsal) using cam 4, scale 6 (or 60) if possible for 10 to 20 minutes. The abdominal contractions must be gradual, firm, full and the

relaxation slow, a rising holding and declining contraction. This develops muscular tonicity and increases intra-abdominal pressure and activity.

In conclusion the reader's attention may be called to the fact that any and all of these measures may be employed alone or in combination without there being the slightest contraindication for their use. The careful, scientific and intelligent combination of rest, diet, hygiene, chemical and physical measures will often bring results when ordinary drug and other medication fails.

Auto-Condensation

The D'Arsonval auto-condensation treatment is

Sedative,

Reduces high blood pressure,

Increases metabolism and body heat, and is most useful in:

Neurasthenia,

Arterio-sclerosis,

Dysmenorrhea,

Leukemia,

Menopause, and

Insomnia.

The bipolar current is employed.

The necessary appliances for administering this treatment consist of a folding chair pad or padded cushion, on which the patient either sits or reclines, and a metallic handle which is usually held in the patient's hands. The patient undergoing treatment really forms one section of a condenser.

The auto pad, as we will call it in the following, consists of a metallic plate covered with sufficient insulation to prevent the high voltage current jumping through, and this plate forms the opposite side of the condenser.

When administering an auto-condensation treatment it is well to remember, as in the giving of any electrical treatment, to employ only a moderate amount of current at the start regardless of the amount of milliamperage that may follow, and then to taper off each treatment by cutting the current down gradually before opening the switch.

The volume of milliamperage will depend on the nature of the case, although 600 to 850 M. A. are about average. Most operators agree that the milliamperage used for the first treatment should not exceed 300, that this current be increased at subsequent sittings to the desired maximum, and to taper off gradually to the end of the series of treatments. As an example: it has been proven that by breaking the series of treatments off too abruptly the effect will be lost in a short time, that the patient's blood pressure may have been reduced for the

time being but that it soon returns almost to normal. On the other hand, tapering the milliamperage off gradually, the effect is lasting and usually completely satisfactory.

Do not touch your patient during a treatment, as the shock at the point of contact might be disagreeable.

Be sure that you use a wooden chair or wooden table. Never lay the auto pad out against metal.

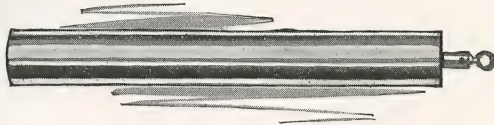
You will find from experience that you will be able to pass a great deal more D'Arsonval current through a stout patient than through a thin one. This is just the opposite of the effect obtained in administering medical diathermy, as an obese person will take less milliamperage at a given setting of the controls on the outfit, than a thin one.

You should always recommend that your patient drink a great deal of water during a series of auto-condensation treatments.

One of the most important features of an auto-condensation treatment is that your patient must be fully relaxed and made just as comfortable as possible.

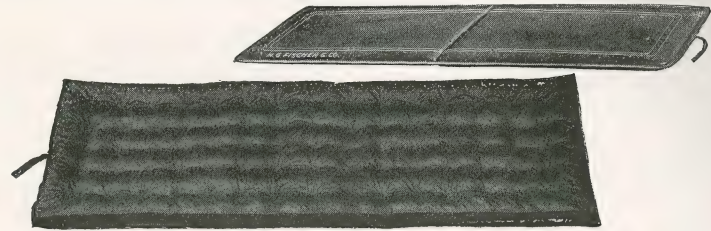
Patients with exceedingly high blood pressure, and with a slow pulse, should be carefully watched during and after treatments.

The treatment of hardened arteries, walls lined with calcareous deposits, must be undertaken in a systematic way if lasting results are to be obtained.



During the menses it is inadvisable to use any high frequency treatments, but on the contrary, in cases of suppression, auto-condensation may be used as a stimulant.

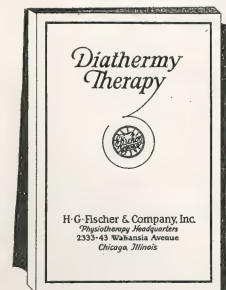
It is well to place the patient's hands on a pillow or large book when using a metal handle, in this way keeping the hands away from the body proper so there will be no danger of sparking. Caution your patient not to drop this metal handle with the current on, or even relax the hold, as resulting sparks will be sufficient to cause a severe burn.



(Reprinted from "Diathermy Therapy," Published by H. G. Fischer & Company, Inc.)

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This book of 124 pages, profusely illustrated, contains a full discussion of all the modalities used in diathermy therapy. In addition, there is an A to Z list of indications and treatments, both medical and surgical. Each subject is discussed, and technic given for diathermy treatment. The application of electrodes is shown by actual photographs taken under the supervision of physicians widely experienced in the use of electro-therapeutic modalities. Flexible binding. Price, \$1.00.

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By IRA O. DENMAN, M. D.
Toledo, Ohio

Actinic-therapy has been available for many years for general body radiation, including skin diseases, by the use of the Alpine Sun Lamp—the large lamp. Not until the lamp devised by Kromayer, which bears his name, was it possible to make actinic applications to the closed cavities such as the ear, nose and throat specialist requires. Only since 1913 has this lamp been available through its American manufacturers. This lamp generates great quantities of ultra-violet rays in a quartz vacuum tube in which an electric current passes through a metallic mercury arc. A high temperature causes the mercury to vaporize and the ultra-violet rays pass through the quartz tube from which it is directed to the field to be treated by suitable extensions, also of quartz.

The attachments include a small quartz rod for treatment within the auditory canal, a small rod for the eye, a larger rod for intra-nasal and sinus treatment, a tube tipped with a quartz condensing lens for intensifying the radiation of the tonsils and pharynx; a similar one, only periscoped, to direct the rays at right angles; and a large condenser for intensive radiation of external surfaces such as cervical glands, etc.

To convey the idea of the potency of this agency permit me to state that one minute exposure with this lens of a sensitive skin will produce an artificial "sun burn" with all the stages that one gets at the bathing beach—redness, then tan, soreness and peeling in four or five days—and the lens itself remain cold all through the exposure, the patient experiencing absolutely no sensation.

Broadly, indication for actinic-therapy in our special field as elsewhere, is infections. It sterilizes corneal ulcers, traumatic injuries of the cornea or lids, all forms of conjunctivitis, especially the diplococcic infection, eczema of the external ear, canal furunculosis and canal infection as in the bather's ear, chronic

middle ear suppuration, hay fever (not curative but relieves the patient by destroying much of the accompanying infection), pharyngitis, Vincent's angina (almost a specific) and tonsillitis, especially the acute.

Donnelly, of Detroit, has carried out a series of experiments for the Detroit Health Department on sterilization of diphtheria carriers with success.

The Kromayer lamp has assisted me in relieving or curing all the above conditions with the exception of the last—diphtheria carriers. I have not had an opportunity to use it in such a case.

The conditions in which I was most interested when I installed the apparatus were foci of oral and naso-pharyngeal infection other than the tonsils and adenoids. These cases which have a red nodular throat long after a clean tonsillectomy and adenoidectomy has been done. Often such cases carry a little temperature and the cardiac condition, or the arthritis persists for some weeks or months after operation. I hoped by the use of the strong bactericidal action of the ultra-violet ray to hasten the convalescence in these cases. I am pleased to report that this I am now able to do.

It must be borne in mind that the lymph nodes in the tonsillar pillars, the infra-tonsillar nodule, the lingual tonsil and scattered about throughout the surfaces of the respiratory tract carries infection. Also the epithelium itself provides a lodgment for it, according to Rosenow. And, as these areas are not amenable to surgical extirpation, nor to medicinal measures, the actinic rays may well be depended upon to fill in the gap.

While treating some non-tonsillectomized throats in this manner, I discovered a slight shrinkage of the tonsils in the free non-submerged type. The shrinking was accompanied by a diminution in the congestion and the cryptic discharge. Were it possible to secure a deep penetration of this ray, I am of the opinion that such tonsils could be destroyed by it. However, as the penetration is limited to two millimeters, sterilization can extend only that far. This is not, however, the entire action which we get from the agent. The local stimulation and increased metabolism which results, no doubt, raises the resistance of the infected field.

The limited extent to which the ultra-violet ray will penetrate constitutes its limitation. This fact made me highly desirous of bringing about a shrinkage of tonsillar tissue so that these rays could extend deeper toward the capsule. This was especially necessary in the submerged variety of tonsils. My next interest lay in the x-ray shrinkage of tonsils and adenoids as proposed and carried out by Dr. Witherbee, late of the Rockefeller Institute for Medical Research.

At the present time I have a series of cases of all varieties of tonsils under alternate treatment with the two. In addition, in those whose resistance is low, I have thrown in an occasional body radiation with the Alpine Sun Lamp. A few cases are discharged, but under observation, not having had any trouble whatever this winter. I feel assured from the progress already made that I shall be able to make a favorable report on a series of cases later.

I do not wish to be understood as proposing a substitute for tonsillectomy, I am doing and expect to continue to do tonsillectomies, but in non-operative cases, and those who need, but refuse surgery, this may offer an alternative. One case I have now under treatment has a chronic mitral regurgitation and another is a hemophiliac, a sister having bled to death from a tonsillectomy. Another is a woman near seventy-five, an asthmatic, but who has a chronic tonsillitis with a severe arthritis, at times unable to walk. With such cases one should at least investigate thoroughly, without bias or prejudice, an alternative to surgery.

(Abstracted From Eye, Ear, Nose & Throat Monthly)

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Diathermy in Joint Injuries

At the Annual Meeting of the A. M. A., F. H. Ewerhardt, of St. Louis, discussed first the more generally known forms of heat, conductive, convective, and conversive. Conduction, he said, was that form of heat which was conveyed to the body by virtue of direct contact with a superheated substance. Convective heat radiated from a source approximating, but not in contact with, the body. The numerous so-called bakers, whether heated by gas burners, or electrical resistance wires of electric light, were forms of convective heat. With respect to the latter a qualifying statement was essential. Light from the viewpoint of heat producing agency, operated in two distinct and definite ways, which placed it in two of the three groups. That part of the heat which was generated as a result of meeting resistance in its passage through the glass bulb and the air intervening between the source and the part to be radiated, was distinctly a form of convective heat, while the remaining rays, visible and invisible striking the skin penetrated it, and meeting increased resistance were in turn converted into heat, thus forming and belonging to a third type, namely, conversive heat. This form might be defined as one in which light or electric energy, in its passage through human tissue was converted into heat. By the term diathermy was meant the process of heating through the tissues as contrasted with convective and conductive heat. The source of diathermy was a high frequency current of high voltage and relatively low amperage. The strength of the current used might be any part from one hundred to three thousand milliamperes. The extreme high rate of alterations or oscillations might range from one half to two million a second and were so far removed beyond the point where human tissue responded either by muscular contraction or electrolysis, that the result was a conversion of the electric energy into heat energy. For these reasons it was not correct to speak of diathermy as being an electrical treatment *per se*.

The physiological effect of convective and conductive heat was a vasomotor dilatation followed by a venous stasis and fre-

quently by free perspiration. The heat, however, penetrated barely beyond the dermis for here the abundant vascular system dissipated it to other parts of the body. Wherever a relaxation of the superficial tissues was desired, this form of heat was indicated.

The action of radiant light and heat for localized purposes was much the same as that of conductive heat with the difference that the light rays possessed a definite power of penetration, some deeper than others, and were then converted instantly into heat, and though a considerable quantity of it was carried off by the blood stream, yet much of the total volume was carried deeper into the tissues. Diathermy, the author repeated, was a means of heating deep tissues by means of a high frequency current which passed from one electrode to the other in straight lines affecting whatever tissue intervened. He believed that the method should appeal to the surgeon who believed in the efficacy of the functional treatment of fractures and joint injuries.

Ewerhardt's conclusions, based on an experience of two years in the physiotherapeutic department of the School of Medicine, Washington University, were as follows:

"1. That diathermy is 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 cooperation of the patient.

"2. That it is a valuable measure, at least a 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.

"3. That patients take kindly to it, are favorably impressed with the procedure, and their cooperation is more easily secured where movements and massage are indicated.

"4. That unquestionably the period of convalescence in the treatment of fractures is materially reduced.

"5. That its application seems indicated in postoperative bone

and joint conditions, acute sprains, fractures, and bursitis; acute and chronic arthritis, and in treating contractures, fibrositis, and myositis ossificans.

"6. It is contraindicated in cases of pus sac without drainage, where there is danger of hemorrhage, and in tuberculous joints and suspected malignancy."

(From *Med. Jour. & Rec.*, June 3, 1925)

Pacific Physiotherapy Association Reports Interesting Meetings

Pacific Coast physiotherapists have found recent monthly meetings of the Pacific Physiotherapy Association most interesting and profitable, it is reported by our Los Angeles correspondent.

At the May meeting, Dr. H. A. Rosenkranz, of Los Angeles, was the speaker of the evening, covering the subject of "Electrotherapy in Genito-Urinary Practise" in a very satisfactory manner. At the June meeting, D. D. Comstock, M. D., spoke on "General Hydro-Therapeutic Principles;" M. L. Mann, M. D., on the "Use of Hydro-Therapy in Mental and Nervous Diseases;" and Fred Moore, M. D., on "Light Therapy."

Both meetings were well attended and great interest was evidenced. *Fischer's Magazine* extends congratulations to the Association for the success of their worthy efforts.

W. B. Chapman, M. D., of Carthage, Mo., wishes us to call attention to an error in his article on "The Treatment of Tuberculosis By Physical Agents," published in *Clinical Medicine* for July. The preparation of Chloro-Calcium mentioned by Dr. Chapman is put up by Sharp & Dohme, instead of by another manufacturer as stated in the article.

Influence of Unusually Large Doses of Ultraviolet Light on Nasal Membranes

By A. R. HOLLENDER, M. D. and M. H. COTTLE, M. D.
Chicago, Illinois

Contrary to the advocated technique of minute doses of ultra-violet, as obtained from a water-cooled quartz lamp, we have found that in many instances, massive dosage is to be preferred when treating certain diseased conditions of the nasal membranes. We are fairly well convinced that the nasal membranes tolerate ultra-violet radiation far better than the pharyngeal membranes, and desire at once to emphasize, that, whereas large doses may be applied in the nose, the greatest caution must be exercised when raying the pharynx.

It should be noted further that tolerance must be worked up gradually. It is not unusual for us to give a nasal treatment of ten minutes (on each side) at the sixth visit of the patient to the office. This is building up tolerance much more quickly than formerly, but is decidedly more rational. The surface bactericidal effect may be obtained in the average lethal dose time for bacteria commonly found on the nasal membranes, but, it appears a more pronounced therapeutic effect is possible in some conditions by the increased dosage.

There are additional factors to consider in this connection. These are the use of certain physical agents and drugs preceding the application of the ultra-violet rays. Diathermy, employed in the nose up to a point of comfortable tolerance, definitely enhances the action of ultra-violet irradiation. The diathermy should be applied by means of a non-vacuum electrode and the average time is ten minutes in each nostril. The diathermizing of the nasal mucosa is in itself bactericidal and to a large extent desensitizing. Patients sneeze violently at the first treatment but cease completely after several applications. When diathermy precedes ultra-violet in the nose the time of the latter may be safely and adequately cut in two.

Mercurochrome, eosin and other sensitizing compounds un-

doubtedly increase the penetrating powers of local quartz ray therapy. This has been demonstrated repeatedly. One must guard against long exposures when these anilin dyes are first applied. We have had frequent occasion to employ them in post operative antra and sinuses preceding the local use of the water-cooled apparatus.

Of late we have been observing the action of ultra-violet on the nasal membranes, preceded by argyrol tamponage according to the Dowling method. While argyrol tamponage is in itself a very efficient procedure for a variety of indications, we are ready to state now that a far improved action is obtained when the ultra-violet is applied subsequent to it. There are many reasons for this which would lead into colloidal chemistry, and for obvious reasons must not be mentioned in this brief abstract. Suffice to say that the action is far superior to the use of the drug or the light alone.

In conclusion, it must be emphasized that fractional doses have their place in therapy. Massive dosage serves better in many indications. The fact to be regretted is that there has not been sufficient personal investigations along these lines. Everybody has been willing to accept the printed directions as fact. Caution must be exercised. It is far wiser for the novice to adhere to smaller dose limits, but his aim should be to determine the limitations.

Another important consideration is the age and condition of the burner. These factors have marked influences on the reaction, time limit of exposures, etc. Each operator must know his lamp, its blistering effects and its minimal dosage which may be applied with some anticipated reaction.

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For use with the nebulizer of the Fischer F-O Senior Diathermy Outfit, the Prophylacto Mfg. Co., of 227 W. Erie Street, Chicago, have developed a very satisfactory compound which is supplied by them, to physicians only, under the name of Pemco Menthol Eucalyptus Compound Nasal Spray. Free samples of this compound may be secured by writing the manufacturers direct.

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Special rooms will be provided on the mezzanine floor for smaller groups attending clinics and round table discussions, and for demonstrations to follow up interesting talks delivered from the platform. There will also be clinics at Chicago hospitals.

Admission will be by card only. A. M. A. rules will apply throughout; either an A. M. A. fellowship card or its equivalent will ensure admission. Arrangements for accommodations, etc., will be attended to on request by the Educational Department of H. G. Fischer & Company.

A record attendance is anticipated. There were over seven hundred physicians and surgeons present at last year's Convention, and this year's record will be much higher. Those interested are advised to make plans now and

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Chariton, Ia.

Treatment of Pneumonia by Diathermy

By WILLIAM BENHAM SNOW, M. D.
New York City

The successful employment of diathermy in the treatment of pneumonia is based upon the effects of heat produced by that current in its passage through the tissues. That the current, in its passage, produces effects upon the metabolism of the cells other than the conceded effects of heat is probable; for, there are reflex effects from the administration which are attributable to heat applied at moderate temperature. The action of heat upon all tissues is to raise the local resistance together with depressing effects upon bacteria with degrees of heat not otherwise detrimental.

Diathermy

Diathermy, the bipolar method of administering the d'Arsonval current, produces the local and constitutional effects of heat; the effects depending upon the sizes of the two electrodes, the current strength of the administration, the duration and the method of application. In the treatment of pneumonia with two electrodes of equal size placed at opposing sites, the skin toleration determines a safe degree of heat for passage through the intervening parts. This is easily affected with perfect control with modern apparatus, the so-called thermal penetration producing the characteristic effects of heat.

Treatment

High frequency transformers of adequate efficiency are now made by many manufacturers and consist essentially of a closed circuit transformer to step up the voltage, which is properly placed in circuit with two condensers, a d'Arsonval coil, a spark gap, and a hot wire meter. The multiple spark gap is a crowning feature of any apparatus of this kind.

The electrodes may be made for use by the physician or his aides of sizes and shapes to meet the requirements of individual cases and conditions. They are made of soft composition metal or lead of thickness 22 B. and S. gauge.

We introduced the method of turning over the edges to give

a rounded surface that would not discharge current from the margins as from a sharp edge of the metal, and so irritate or burn the skin. We leave a wide margin turned over at one end, to which we secure the clamp of the connecting cords that will securely hold it in place. This is important, as otherwise a dislodged terminal might cause a severe burn. The electrodes are thoroughly moistened and placed in close contact with the skin and must be firmly secured, so the patient can in no way remove them when the current is turned on, or a severe burn may be produced. The current should then be turned on slowly, taking from five to ten minutes to acquire the maximum temperature to be employed. During this time the patient should be instructed that the temperature over the whole surface should be the same. If there occurs a stinging sensation anywhere at the margin, or beneath the electrode, that pressure will not arrest, it will indicate that it is not in proper contact possibly from the presence of some object, as clothing or dressing beneath the metal, or that it is not properly moistened. It must then be removed and readjusted. Let the patient perfectly understand this, and if for any reason the surface is anesthetic, or the patient unconscious, observe the greater care.

These matters of technic are important, but require no more than ordinary foresight and attention to details with which all who employ diathermy should be familiar.

The following case will illustrate most of the pertinent points of technic, and the progress of a case under treatment:

Case Report

CASE.—Dr. H. B. K., dentist, a transient in the city, was taken suddenly ill at a hotel Sunday evening, March 18, 1923. He was seen Sunday afternoon by the house physician who pronounced it to be a case of grippe with malaise and pains in the lower back with a slight cough. Monday afternoon there developed in the patient a temperature of 104° F. with pain in the side when a diagnosis of pneumonia was made by the house physician. This was on March 19th.

The temperature, pulse and respiration from the 20th to the 23rd were continuously high, the temperature ranging from

103° to 106° F., the pulse from 112 to 140, and the respirations from 35 to 60.

On the morning of March 23d, I was called on by friends of the patient and requested to assist in the treatment of the case with diathermy. The patient's condition was otherwise considered to be hopeless. With the consent of the physician in charge we began the treatment. After some difficulty, we had the apparatus installed and on March 23rd the first treatment was instituted by my son whom I delegated to take charge of the case.

The patient was first seen in consultation with the hotel physician on the evening that treatment was instituted. At this time he was suffering from a case of type three pneumonia in the fifth day.

There was consolidation of the entire right lung and the lower lobe of the left lung. The patient was cyanotic, receiving inhalations of oxygen every half hour for ten minutes, and regularly digitalis and camphor in oil for stimulation. His temperature was then 104.2° F., pulse 120, and respiration 40.

The first treatment was given at 6 p. m. for twenty-five minutes 1500 m. a. with electrodes four and a half by seven inches, laterally through the posterior cardiac space. At 8 p. m. the temperature was 105.6, pulse 112, respiration 60. At 12 p. m. the temperature was 106, pulse 114, respiration 60.

March 24th, sixth day, the treatment was administered at 4 a. m. as on the previous evening.

After treatment temperature was 104, pulse 116, respiration 40. At 8 a. m., temperature was 104.8, pulse 116, respiration 48. At 12 m., temperature was 103.6, pulse 98, respiration 40.

Third treatment at 12 m. Same technic but prolonged to forty-five minutes. At 4 p. m., temperature was 102.6, pulse 100, respiration 36.

The patient was complaining of severe pleuritic pain, and instructions were given to get a therapeutic lamp and apply the reflected incandescent rays over the painful areas for at least one hour at a time or continuously, if necessary.

At 6 p. m. the fourth treatment was administered for forty-five minutes. At 8 p. m., temperature was 103.6, pulse 120,

respiration 48. At 12 p. m., temperature was 103, pulse 98, respiration 40.

March 25th, seventh day.

At 4 a. m., temperature was 102.6, pulse 100, respiration 36. Pleuritic pains were greatly moderated and the quality of the pulse was greatly improved. Treatments from this time were given for one hour each. At 8 a. m., temperature was 101.1, pulse 90, respiration 30. At 12 m., temperature was 101, pulse 100, respiration 32. At 4 p. m., temperature was 101.4, pulse 101, respiration 30.

At 7 p. m. treatment was given anteroposteriorly through the base of the right lung for one hour. At 8 p. m., temperature was 102, pulse 98, respiration 32. At 12 p. m., temperature was 101.8, pulse 104, respiration 36.

March 26th, eighth day in bed.

At 4 a. m., temperature 101, pulse 90, respiration 40. From noon March 25th, or after the fourth treatment with diathermy, no cardiac stimulants were given. This was undoubtedly due in part to the administrations of reflected incandescent light, which has been demonstrated to produce remarkable reflex clinical effects upon the cardiac centres in pneumonia and other depressed cardiac conditions.

On March 29th at 8 a. m., the patient had fluid at both bases, which was completely dissipated by two diathermy treatments.

From this point on, the patient made an uneventful recovery, two diathermy treatments being given daily over different parts of the chest as indicated.

On April 2nd, the patient felt well, but complained of a husky voice. One diathermy treatment anteroposteriorly through the larynx cleared this up.

The patient was discharged on April 3rd. The temperature was 98.6°, pulse 80, respiration 24.

Conclusions

1. Diathermy when skillfully administered in pneumonia with due regard to existing conditions is devoid of all danger, always a synergist, and never an antagonist to other measures.

2. Heat employed as a therapeutic measure increases local tissue resistance because the normal reflexes respond with an increased influx of arterial blood into the part, increasing phagocytes and improving nutrition and local metabolism.

3. Diathermy is the only measure that will induce heat with safety and uniformity through the body between two equal surface contacts. When so applied, it renders an exceptional service in the treatment of infectious conditions, and is unlimited in its indications, except over walled in pus cavities.

4. In all acute pulmonary conditions and early phthisis, it plays an invaluable rôle, in accord with the recognized therapy of heat.

(Abstracted from *Med. Jour. and Rec.*, May 6, 1925)

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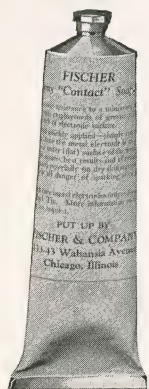
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Arthritis

By D. FRANK KNOTTS, M. D.
Chicago, Illinois

Arthritis is an inflammation of a joint or joint tissue. We know that arthritis may come from various causes. It may result from direct injury to the joint, as traumatic arthritis, or may be of a toxic or infective origin, as syphilitic, gonorrheal, tubercular, or rheumatic, etc. It may be acute, sub-acute or chronic, and is usually characterized by pain, redness and swelling, either or all of which symptoms may be present.

A differential diagnosis is quite necessary before beginning treatment. We must be sure of what is causing the arthritis, and direct our treatment at the cause. We must search for, locate and eliminate all foci of infection before we can hope for permanent results with any treatment. I presume you all know how to conduct this search. Find and remove the source of infection wherever located.

Admitting that a focus or multiple foci of infection exist, whether in the tonsils, teeth, sinuses, bladder, intestinal tract—including the liver, gall-bladder, appendix, colon, broken down crypts of Morgagni, prostate and seminal vesicles, or ovaries and tubes—we may have a joint circulatory stasis developing into inflammation, with an inclination to deposit exudates.

This may be slight at first, not enough to cause any inconvenience, but if the patient be exposed, such as getting the feet wet, or in some other manner, the inflammation may become intensified and exudates are increased, causing swelling and pain. An exposure of this kind was all that was necessary to bring on this attack. Of course it is assumed by the patient that the exposure caused the arthritis, when in reality it was only a contributing factor. These infective sources must all be located and eliminated. After we have accomplished this, we then deal with the arthritis.

With diathermy we can produce an active hyperemia in the diseased joint, hyperemia being one of Nature's methods of overcoming a pathological condition, thus reducing congestion and having a tendency to absorb soft exudates.

Physiotherapy is no longer an experiment, its therapeutic value has been proven beyond a question of a doubt. It now ranks with medicine and surgery as a therapeutic agent. It is my opinion from my observation that the physicians who obtain the best results with physiotherapy are those who make a painstaking examination, are sure of an accurate diagnosis, carefully select the indicated modality, and apply it in just the proper manner for the correct length of time.

In syphilitic arthritis, as in other forms, we treat the underlying cause as well as the local manifestations. We naturally must treat the syphilis as well as the arthritis.

In tubercular arthritis, which is more common in children than in adult life, the foci are generally in the lungs, and must also be dealt with.

In gonorrheal arthritis, the foci are usually found in the prostate and seminal vesicles in the male; this we treat with a sedative diathermy—a prostatic electrode in the rectum and a 4x5 or 4x6 mesh or block-tin electrode above the symphysis pubis, having the electrodes well soaped before applying them. Use soap on the rectal electrode, as the jelly lubricants dry up from the heat and the electrode will stick to the mucous membrane.

The cords from the electrode are connected to the D'Arsonval binding post; the spark gap should be closed, and the control switch set at a point that will give sufficient current (500 to 700 milliamperes). On the Fischer F. O. Senior Cabinet this is eight.

The current is now turned on, and the spark gap very gradually opened until the milliammeter reads 100; after thirty seconds open up to 200. Continue thus until you reach 500 to 700 milliamperes. As the prostatic electrode is not wide enough to cover the entire diseased area thoroughly, it is necessary to swing the electrode to the opposite side about every five minutes in order to properly heat all diseased tissue throughout, using, as above stated, 500 to 700 milliamperes for a period of from thirty to forty-five minutes; then gradually turn off the current.

After completing this diathermy treatment, it is well to give

a mild prostatic massage. This is done without removing the electrodes, but by attaching the cords to the Morse Wave Generator. Give a gentle massage for five minutes, with a very mild current, using precaution to avoid traumatizing the prostate by a too vigorous massage. This expresses the infectious material from the prostate and occluded seminal vesicles. Repeat this treatment daily, or every second day.

We always clean out the intestinal tract before starting our treatment. We have no set treatment for arthritis. We do not hesitate to use any therapeutic measures at our command that promise results.

As I have indicated, we locate and eliminate the underlying causes. We always employ diathermy with any other treatment we are giving, as I do not know of any form of arthritis where diathermy is not indicated. Diathermy stimulates subnormal metabolism around the joint, and as a rule the pain is controlled, the grating in the joint on movement is lessened, and there is a general improvement of tone. However, it is not uncommon, and sometimes desirable, especially in the more chronic cases, to get a marked reaction for two or three days when we start our treatment.

Of course the patient is going to feel worse for the time being. In the more stubborn cases, if the treatment is not pushed to the point where we get this reaction, the condition will often fail to clear up. But following this reaction, we can confidently expect improvement.

If fibrosis has taken place, we use diathermy and forcible manipulation.

In a traumatic arthritis that does not clear up under the sedative diathermy, look for the foci of infection.

I recall a case of a boy with a traumatic arthritis of the knee, that persisted for some time, becoming progressively worse until his physician suspected a tubercular joint. X-ray showed no pathology. He was referred to us.

On examination we found his tonsils badly diseased. After coagulating the tonsils and using sedative diathermy through the knee, there was a marked improvement within two weeks, and he went on to a rapid and complete recovery.

Another case was that of a man with arthritis of the ankle, which had failed to clear up under medical treatment. His dentist had X-rayed all suspicious looking teeth, and had found no pathology.

We went over this matter very thoroughly, and could find no reason why this arthritis should persist. We suggested that he have another X-ray of his teeth taken—this time of a full mouth. To this he naturally objected, as he had just gone to the expense of having the teeth X-rayed, but he finally agreed.

The full mouth X-ray showed a completely unerupted impacted wisdom tooth lying horizontally, imbedded in the jaw bone, and surrounded by an abscess.

The reason the dentist had failed to find this impacted tooth, was that there were no suspicious looking teeth adjacent to it, and he had only X-rayed the suspicious looking teeth, thinking it unnecessary to X-ray this area. In this way he completely overlooked the very object of his search. What was further misleading, was the fact that the patient thought he had had this tooth extracted several years previous. There had been no pain or discomfort in the region of this tooth, and nothing to cause us to suspect any trouble there. After the removal of this impacted tooth, the arthritis yielded to the usual treatment.

I wish to impress upon you the necessity of searching every nook and corner yourself, rather than accepting some one else's findings. Do not be misled by the patient telling you that his teeth are out; for it is not uncommon for the X-ray to show abscessed roots beneath apparently healthy gums.

Another case was that of a young man having arthritis in both knees and both ankles. It having come to the knowledge of his physician that arthritis is often caused by the teeth, he thereupon, without examination or X-ray of teeth, had all the patient's teeth extracted. Much to this physician's surprise, the arthritis did not improve after this. The patient, finally becoming discouraged, consulted us. Upon giving him a thorough examination, we found a prostate and seminal vesicles loaded with pus. Diathermy through the prostate and seminal vesicles, followed by a mild massage with the Morse Wave

Generator as described previously, and with sedative diathermy through the affected joints resulted in complete relief.

It is unreasonable to give diathermy and expect results that are lasting, if you do not eliminate all foci of infection, before starting diathermy.

The method of applying diathermy varies with the joint or joints affected. For knees or elbows we prefer the double cuff method, and we always include as much of the surrounding tissue as possible, the pathological condition usually extending beyond the joint.

We can treat all joints of hands or feet at the same time by the double cuff and salt water method. We can treat both wrists or both ankles at one time by four cuffs, or by two cuffs and two plates.

In treating an elbow, we select two electrodes two and a half to three inches wide that will reach around, or almost around, the arm and forearm, about four inches above and below the elbow. Soap the electrodes and arm thoroughly with a good soap lather, apply the electrodes and hold in place with an elastic bandage just tight enough to cause good coaptation of electrodes with skin to prevent sparking, but not tight enough to constrict when the arm starts to heat up. The arm should be kept as nearly straight as possible to prevent excessive heating of the inner bend of the elbow.

With the spark gap closed, set the control switch at twelve. Turn on the current, gradually open the spark gap to 100 milliamperes, wait thirty seconds, open to 200, gradually turn it on 100 at a time until the milliammeter reads 800 to 1000, according to the size of the arm, taking three to five minutes to bring current up to this point. Now we have not broken the current during this turning on process.

The Kolischer spark gap is the only one I know of on which you can run up the current gradually like this, without breaking it. The advantage is obvious, in the smooth flow of current.

Just a word about turning on the current to get the best results out of your machine; estimate the amount of current you

are going to use, set the control switch so you will secure this amount without having the spark gap opened too much when you have reached the maximum amount of current to be used.

If the spark gap is opened too far you do not get a smooth current—it is more of a rough or Faradic type. Rather, open the control switch wider and it will not be necessary to open the gap as far.

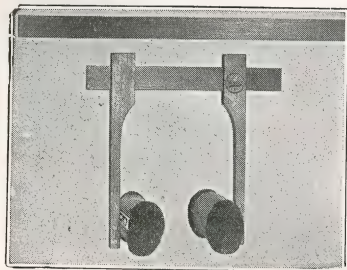
Starting with the gap entirely closed, and the control switch set at the desired point, run the current up very gradually 100 at a time by slowly opening the gap until you have reached the amount of current to be used. Do not change the control switch after starting your treatment. Increase the current by the spark gap only. This holds good in all sedative diathermy or auto-condensation treatments.

General ultra-violet exposures and auto-condensation are valuable additions in the treatment of arthritis cases.

Auto-condensation produces heat in all tissues of the body, energizes the cells, stimulates circulation, increases metabolism, hastens oxidation and elimination. It is readily seen, therefore, why auto-condensation is valuable as an adjuvant.

(Reprinted from "Physiotherapeutic Lectures, Third Edition")

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Epilation With Diathermy

A Preliminary Report

By ADOLPH ROSTENBERG, M. D.

New York

One of the most trying problems in cosmetic dermatology is the successful management of hypertrichosis. The unfortunate sufferers of this disfiguring ailment fall an easy prey to the advertising quacks who promise a cure but usually fail.

So far we only know of two methods in the treatment of hypertrichosis: the x-ray and electrolysis. Unfortunately, the x-ray, while an excellent agent in so many dermatological conditions, fails here and should be thoroughly discouraged, as the dose, required to produce a permanent alopecia, must exceed an erythema dose and is therefore likely to produce skin atrophy and telangiectasias, which are much more disfiguring than the original condition.

The second method is epilation by electrolysis, which, if used properly, is safe but unfortunately not free from many drawbacks. The main objection, aside from the slow progress and considerable pain to the patient, is that in the hands of the average operator only fifty to sixty per cent and done by a skillful man, perhaps seventy-five per cent of all the hair treated is successfully removed in one sitting, the balance will reappear, as the needle, no matter how skillfully inserted into the hair follicle, does not always strike the hair papilla in order to destroy it. The time necessary for the treatment of one hair averages about a minute, so that hardly more than twenty to forty hairs can be treated in one sitting. This method is usually most discouraging. Any improvement on this method should thus be welcome.

For the last few months I have treated these cases with the bipolar current of a modern high frequency machine, using electrocoagulation. The needle is connected with one pole and another metal electrode is attached to the skin. The needle is then inserted in the hair follicle and the current turned on with a footswitch, after having set the machine, to give the smallest possible spark. A current of about 80 milliamperes is usually

sufficient. It takes about ten to twenty seconds for the successful removal of a hair, which is almost one hundred per cent perfect. The papilla is destroyed as the hair comes out without the slightest pull. The reason is that the coagulation spreads over a large enough area to destroy the papilla, even if the point of the needle does not touch it. By this method from seventy-five to one hundred hairs could be removed in one sitting and the percentage of recurrences is negligible. The pain is considerably less than caused by electrolysis. I have not noticed any scarring following the treatment.

Conclusion

While I have only used this method for a comparatively short time, I have been favorably impressed by its possibilities.

(From Med. Record)

His Largest Fee

W. B. Holden, M. D., addressing the graduating physicians, nurses and dietitians at the College of Medical Evangelists at Loma Linda, California, May 31, wanted to impress the graduates with the importance of doing other things in this world besides chasing the almighty dollar.

He cited a case which netted him his largest fee in practise. A call came to him from a certain mother who had a family of 17 children, the last of whom had reached the age where he noticed that he could not walk like the rest of his brothers and sisters, could not wear shoes and found that the soles of his feet were staring at him repeatedly. He was club footed. The mother told Dr. Holden that she had nothing in the world but the 17 children and wondered if something could be done.

After several operations. and after some time had elapsed, the mother was sent to a store for the little boy's first pair of shoes. She returned to the doctor's office, the little fellow wearing the shoes. He looked down at his shoes admiringly and then smiled up at the doctor—a smile of true gratitude.

Dr. Holden said that was his compensation. The largest he had ever received in his life!



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Physiotherapy Headquarters

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Chicago, Illinois

A PAGE OF FUN

Teacher—"Why do you always add up wrongly?"

Scholar—"I don't know!"

Teacher—"Does any one help you?"

Scholar—"Yes, my father!"

Teacher—"What is he?"

Scholar—"A waiter!"—Vik-ingen, Oslo.

□ □ □

Butcher—"This pound of flax-seed you sent me is three ounces short."

Druggist—"Well, I mislaid the pound weight, so I weighed it by the pound of chops you sent me."

□ □ □

Wife—"There's a burglar at the silver and another in the pantry eating my pies. Call for help!"

Hubby (at window)—"Police! Doctor!"

Foreman—"Here, now, Murphy, what about carrying some more bricks?"

Murphy—"I ain't feeling well, guv'nor; I'm trembling all over."

Foreman—"Well, then lend a hand with the sieve."—The Continent.

□ □ □

Sam (watching the construction of a new filling station)—"Boy, white folks is shure intelligent."

Sambo—"How do you arrive at sech a reduction, Sam?"

Sam—"Dawgone if they don't know jest what lots to dig on fer to git gasoline."

□ □ □

"Good Heavens, man, what is the matter with your face? Were you in an auto accident?"

"No, I was being shaved by a lady barber when a mouse ran across the floor."



Little Willie: "Why, papa, this is roast beef."

Papa: "Yes. What of it?"

Little Willie: "But you told mama this morning that you were going to bring an old mutton head home for dinner!"

Last Call for the August Physiotherapy Meeting for Physicians and Surgeons

Monday, August 10th, 1925

CHAS. E. STEWART, M. D., Battle Creek, Mich.

"Physiotherapy in a Sanitarium".....10:00 to 11:00 A. M.

BASIL M. TAYLOR, M. D., Portland, Ind.

"Common Sense in Diathermy".....11:00 to 12:00 A. M.

C. W. WESTERMAN, M. D., St. Louis, Mo.

"The Use of Light Therapy by the General Practitioner" 1:30 to 2:30 P. M.

CHAS. E. STEWART, M. D., Battle Creek, Mich.

"Physiotherapy in Nervous Disorders"..... 2:30 to 3:30 P. M.

Experience at the Battle Creek Sanitarium, of which he is Associate Medical Director, gives Dr. Stewart a wonderful background for his discussion of the subjects he has chosen. Dr. Taylor's talk on Common Sense in Diathermy will be illustrated by a number of cases recently treated by him with very satisfactory results. In his talk on The Use of Light Therapy by the General Practitioner, Dr. Westerman brings to bear his practical experience, which physicians will find most instructive and valuable.

Ample lecture-hall facilities have been provided, and physicians and surgeons are assured of proper facilities for getting the most out of this splendid program. There is, of course, no fee—just come to the main office and accommodations will be provided for you.

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4th Annual Physiotherapeutic Convention

A wonderfully interesting program has been arranged for this big annual meeting—see pages 15, 16, 17 and 18 of this Magazine. The Convention will be held at

The Drake Hotel, Chicago
October 12 to 16, 1925

Physicians and surgeons who are interested in Physiotherapy are cordially invited to attend, without charge or obligation. The program, sponsored by the Fischer Company, will be wholly in charge of well-known physicians and surgeons. Reservations at the Drake or other hotels will be attended to on request by the

Educational Department

H. G. FISCHER & COMPANY, Inc.

Physiotherapy Headquarters

2335 Wabansia Avenue CHICAGO, ILL.

FISCHER'S MAGAZINE



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SEPTEMBER, 1925

CO-OPERATION

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Fischer's Magazine

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Vol. IV.

SEPTEMBER, 1925

No. 9

The October Convention

Year by year, the Annual Physiotherapeutic Convention continues to reflect in the breadth of its program and the impressiveness of its arrangements, the development and the ever-widening acceptance of the science of physiotherapy.

This year's Convention will be held at the Drake, home of conventions. The five-day program, crowded with interesting lectures and clinics, is given in full on pages 15 to 18 of this magazine. Based on the experience of former years and the suggestions of physicians and surgeons who have attended former conventions, many improvements are planned for this meeting.

The program, for example, has been subdivided to permit the specialist to study his own subject more intensively. There will be sections on:

Eye, Ear Nose, and Throat	Internal Medicine
Gynecology and Urology	Industrial Physiotherapy
Surgery	Miscellaneous Practise
Dermatology, including malignancies	General Diathermy

Another improvement which will be greatly appreciated has been made in the arrangement of the clinics. At last year's Convention there was some crowding at certain clinics. This year, each doctor desiring to attend any particular series of clinics will be asked to register at the desk for those clinics. He will then be notified as to the exact hour and location of the clinic to which he is assigned. And clinics will be repeated as

often as necessary, in order that each may be attended only by a small group, each member of which will be able to see every detail of the work.

No effort will be spared by the sponsors of this Fourth Annual Physiotherapeutic Convention to make it the most interesting and profitable one for the visitors that has ever been held. While the Convention itself will be wholly in charge of physicians and surgeons, all the details of arrangements, accommodations, etc., will be taken care of by attendants drafted from the Fischer organization.

Registrations are coming in from all parts of the country. Reservations at the Drake and other hotels are being made, and we recommend to medical men who are interested, that they write the Educational Department of H. G. Fischer & Company giving full instructions as to what reservations they desire, where they are to be made, and for how long.

The 9th Annual Picnic

Every year, along about midsummer, the entire Fischer organization leaves the business flat for one whole day, and migrates to a grove on the DesPlaines River for the Annual Picnic. That's what happened on July twenty-second, this year; which explains why those readers of FISCHER'S MAGAZINE who telephoned us that day found no one at home!

We traveled out to the picnic grounds in a fleet of busses and autos about three blocks long. And when we got there, did we have fun? Say, Doctor, we didn't have nothin' else but! Races and contests, tug-of-war, sparring match, baseball game, dancing—from the moment we got there until we left at seven p. m., tired but happy, there was one continuous round of wholesome play.

The picnic, with its genuine spirit of camaraderie, is one of many reasons why the Fischer organization operates like a big business family, with every member interested in sustaining the family prestige.

Diathermy in Biliary Affections

By DISRAELI KOBAK, M. D.

Attending Physiotherapist, Cook County Hospital
Chicago, Illinois

Certain inflammatory diseases of the biliary apparatus still represent perplexing diagnostic and therapeutic problems, in spite of the forward strides made by surgeons, internists and pathologists.

Fortunately, we need not idly fold our hands as therapeutic nihilists, for, assuming that a diagnosis of biliary disease has been made before too much tissue has been rendered functionally useless, we possess an agent which can influence deep inflammatory processes with the promise of a *restitutio ad integrum*, and this agent is *diathermy*.

The Function of Diathermy

We are familiar with the effective results obtained by diathermy in inflammatory affections elsewhere in the body, and we also know its definite physiologic influence on perverted metabolism. These favorable effects have, naturally, suggested to us to extend the application of this physical agent to non-malignant, inflammatory processes of the liver, gall-bladder and bile ducts.

Although conversive heat by high frequency currents has stood the test of criticism as a scientific and effective modality, we proceeded very cautiously at first, until by repeated experiences in a number of selected cases we became clinically convinced that we were obtaining satisfactory results. These results were compared with animal experiments, which will be published in detail at some later date.

We know that the action of medical diathermy within tissue structure is primarily a production of local pyrexia. The current of tremendous high-frequency, when accompanied by the proper high voltage or pressure, produces, by virtue of the intracellular friction of the energy and the resistance of the tissues, a measurable and definite amount of heat within the tissue substance—a transformation of electric energy into

caloric energy. By reflex action, because the heat acts as a foreign invasion, the circulation is markedly increased both locally and distally, producing a flooding of the organ by heated and freshly oxygenated blood and lymph. Just as general pyrexia in any febrile condition activates the phagocytic and defensive bodies so also does local pyrexia, irrespective of whether it be due to internal or external causes.

Stasis is reduced by an increased circulation. The fibrosis is reduced or retarded when constantly bathed in a hot and active circulation. Absorption of toxins and the removal of waste products always follows an active circulation. Distant as well as adjacent structures and organs are equally benefited by the hyperactive and heated circulation. The endocrine chain as well as the circulatory and neural systems are proportionately benefited. Elimination is increased by the measurable respiratory exchanges as well as by the other excretory organs. The skin becomes warm and moist, while pain is relieved, due to the sedative action of heat upon the irritated nerve endings. In some instances the varying degrees of heat may very effectively destroy dormant bacteria. Accordingly, we have in diathermy a potential physiologic modality, that allows a truly scientific explanation and logical application in the affections under consideration.

Ascites

When one recalls with what gratifying ease an edematous hand or foot is reduced to normal size by diathermy, the idea suggests itself that ascites may also be relieved or reduced by the same method. Moreover, when one further recalls the fact that diathermy has absorptive powers, i. e., that it removes transudative serum by way of a hyperactive vasodilated circulation, one feels that by diathermizing an ascitic abdomen one may obtain greater effect than by paracentesis.

Cases of ascites thus treated by me have shown decided improvement both locally and generally. The increased heat dilates the vascular system. The fluid is carried off by osmosis by virtue of an overactive circulation. Stasis is relieved, for it cannot exist in the presence of a physiologically engorged, active

circulation. Irritants and toxins are swept off by this active circulation and the entire body is benefited generally.

The heated blood, sweeping through the alveolar lung substance and the heart muscle, benefits both of these organs, so that the heart tones become more regular and normal, while the respiratory exchange shows an increased CO_2 output and an increase of nitrogen and phosphates in the urine. At the same time, sphygmomanometer readings indicate a temporary fall in blood pressure in the hypertensive types, and, contrarily, low-tension types show temporary but decided rise in pressure. These phenomena are explainable by the fact that venous congestion is relieved through the marked activity of the arterial circulation. Visceral congestion is relieved. The liver, the intestines, and other organs within the abdominal cavity are made to disgorge the stagnant pools of blood which choke their structures. When the action of the diathermic current has subsided and the blood stream returns to its normal channels, freshly oxygenated blood enters in great abundance into the previously anemic or venously congested areas. The parts are also placed in a state of better defense against the invasion of toxins and bacteria.

Our experience in the treatment of ascites has been most effective when sedative technic was employed. The purpose of extreme sedation, according to Sampson, permits a greater volume of blood to flood the venously congested and anemic organ without arousing the reflexes to carry off the freshly heated blood supply. Relatively small milliamperage has been used when diathermizing liver structure for the reason that, because of its greater density, less milliamperage is required to heat the structure. Furthermore, to assure depth of penetration with small heat effect, the bipolar technic, alternated with 800-1000 milliamperage D'Arsonval, is the method of choice.

In spite of the apparent benefits, we cannot believe that regeneration can completely take place when cell structures have been completely destroyed. It is apparent, however, that degenerative changes can at least be arrested and partial metabolism salvaged from the progressively destructive process, ensuring comfort to the patient.

Icetrus

Chief amongst the factors that influence jaundice are the various irritants or toxins that produce inflammatory swelling of the terminal portions of the common bile duct. Osler recognizes Murchison's classification, which is (1) obstruction by foreign bodies within the ducts, as gall-stones and parasites; (2) inflammatory tumefaction of the duodenum or of the lining membrane of the duct; (3) by stricture or obliteration of the duct; (4) by tumor closing the orifice of the duct or growing in its interior; (5) by pressure on the duct from growths of the stomach, liver, pancreas, kidney or omentum.

Here, bipolar diathermia is a valuable adjunct. It must be given sedatively at first and with fairly low amperage. Because of the absorptive qualities of diathermia the sudden and rapid elimination of cholic toxins and bile into the general circulation often produces symptoms of intoxication. Furthermore, the diathermized liver and gall-bladder do not need high amperage because of their comparatively dense structures.

It has been our experience that relatively low heat with bipolar diathermia is a valuable adjunct in the first three classifications enumerated by Murchison. The last two, dealing with neoplastic obstruction, fall clearly within the realm of surgery. We have found that sedative therapy must be observed in order to obtain both immediate and lasting results.

Comparatively low amperage and deep penetration by high voltage are important factors in the treatment of this condition. A milliamperage over 800-1000 produces great heat discomfort over the liver region and tenderness and pain over the gall-bladder. This is explained by the dense liver structure, like bony structure, offering greater resistance to the penetrating current, and therefore requiring less volume to heat the organ. The tenderness over the gall-bladder is due to the greater blood volume within the gall-bladder region, producing increased biliary tension in an already chronically distended or plugged up common bile duct.

Decongestive action of heat penetration is nowhere more dramatically demonstrated than in jaundice. Improvement by

diathermia has been rapid when a low amperage and a sedative technic is employed. Inflammatory tumefaction is definitely relieved by virtue of a hyperactive circulation which throws the toxins and waste products into the greater circulation. In the presence of local pyrexia and active circulation, stasis, congestion, irritation and the formation of biliary calculi cannot take place.

From what has been said, it can be readily seen that we have in diathermy a physical agent, which, theoretically as well as practically, must appeal to all unbiased observers as one of the important means for favorably influencing biliary inflammation.

It must not be forgotten, however, that diathermy is not a specific or panacea for all biliary troubles. Surgery has its well-defined indications, and internal medicine, with a suitable dietetic and hygienic regime, finds a large field of usefulness.

(Abstracted from Clin. Med. Aug. 1925)

Annual Meeting of the American College of Radiology and Physiotherapy

The Annual Meeting of the American College of Radiology and Physiotherapy will be held at the Hotel La Salle, Chicago, October 19th to 23rd, 1925. An interesting program has been arranged, and physicians and surgeons interested in radiology and physiotherapy will find this meeting well worth attending. It will be noted that this meeting follows immediately after the 4th Annual Physiotherapeutic Convention at the Drake Hotel (October 12th to 16th, 1925)). Visitors to the Convention may well take advantage of this opportunity to attend both meetings, and arrange to stay over in Chicago for an additional week.

Ultra-Violet Ray in Pain; With Case Reports

By W. A. LURIE, M. D.
New Orleans, La.

The relief of pain is one of the conditions which is rather general and often difficult to treat. Perhaps its treatment by the ultra-violet lamp is not so new to most of you, yet I shall outline some case histories which I hope will prove sufficiently interesting to merit your attention.

CASE NO. 1. Miss R. B., 22 years old, saleslady. In the past two years had suffered with painful seizures involving the facial areas. These were rather infrequent at first and were referred to some dental condition for which the correction was undertaken. Several teeth were removed and bridges made. The pain was again noticed and subsequently other teeth removed and new bridges made. The attacks of pain began to develop more often and with greater severity until previous to my seeing her she was subjected to attacks daily at eleven o'clock. When these attacks came on the patient would be referred to the medical clinic of her place of employment, where usually she had to be given an injection of morphine to relieve the pain. Her depression and pain prevented her returning to work for two days following such an attack and she would work but to eleven o'clock and repeat the performance.

X-ray of the teeth pictured some nonvital teeth on the painful side but no areas of rarefaction or alveolar absorption. The patient refused to have any additional teeth removed, so after looking into the patient's habits and the regulation of hygienic measure, radiations of ultra-violet rays as produced by the water cooled lamp were given.

Using a quartz throat applicator, the rays were directed upward, backward and inward from a point between the cheek and the upper maxilla just behind the position of the second molar. Radiations of increasing duration which began with two minute sittings and ended with five minutes were begun. Radiations from the same lamp at a six inch distance were given over the skin area externally. These treatments never

extended over three minutes. The first treatment was given at the time of an acute seizure. The patient was advised to go home and remain quiet. To the surprise of all, the patient reported for work on the following morning and was immediately sent in for her second treatment. This was given her, and she reported that although she experienced considerable pain during the previous day and night, it was not of the severe character that it had been nor severe enough to have to resort to more than several doses of a mild sedative prescription which she had been given. The next day she reported again and said she experienced very little pain for which she took aspirin and was relieved. After the fourth treatment the patient was told to skip a day but instead she stayed away for several days and when she returned she complained of the return of pain, but not of the old intensity. At this time the treatments were given on successive days and then for four treatments an additional day interval was added. After the tenth treatment the patient again stopped coming but, however, reported that she had no pain. She was seen at rather regular intervals until recently, which is over a period of four years and there has been no return of pain.

CASE NO. 2. Mr. S. B., a traveling salesman with headquarters in New York City, had subjected himself to the removal of all the teeth in his upper jaw for the relief of pain in the right side of the head. This pain was described as neuralgic in character and only relieved with morphine. It was for a dose of morphine that this patient presented himself at the office one morning after a sleepless few nights previous to his arrival in this city. He was induced to allow me to give him the treatment as described in the previous case, with the most happy results. He returned to his hotel after the first treatment and was able to rest and even sleep in comfort. (No morphine had been given.) This patient received treatments for the next five days after which time he left the city. Each year for the past three years he reports to me on his arrival in New Orleans, and he reports that there has never been the slightest return of pain since the treatments.

CASES No. 3, 4 and 5. Mrs. I. F., Mrs. E. M., and Mrs.

D. B., are all cases with a history of neuralgia of the tri-facial type all of which found relief through ultra-violet radiations after the manner described.

Two additional cases merit more detailed histories.

CASE No. 6. Miss M. R. was referred to me by her father, a local physician. Pain in the upper right jaw was the first noticeable symptom. A tooth was ordered removed for its cure but the promised relief did not materialize. Infection of the sinuses was suspected but none found. In addition to the pain, this patient developed a swelling of the tissues of the face to such an extent that the wearing of glasses was impossible. The use of the eyes without the correcting lenses increased the pain so that the patient was necessarily kept at home, quiet and in the dark. At the time of the first treatment, in this case in addition to the technique previously described, a localizer tube was used and the unfiltered rays allowed to play over the roof of the mouth. A nasal applicator was used to ray the frontal sinuses and nasal areas, and by blocking off the eye-balls with block tin shields, the rays were directed onto the face. The following day the patient reported that she had experienced the most comfortable night she could remember since the onset of her trouble. Eight treatments in ten days sufficed to relieve this patient of all her symptoms and to reduce the swelling so that she left this city for her home in Chicago. I have not heard from her directly, but on several occasions her father, the physician, informed me that she had experienced no further trouble.

CASE No. 7. Another more recent, yet nevertheless strikingly surprising case of the relief of pain by ultra-violet radiation can be reported in the case of Miss. A. L., 43 years of age, a school teacher who had suffered for a number of years with lumbago. Some teeth had been removed for the relief of this painful condition without results. Six months prior to the patient coming under my care, she developed a facial neuralgic pain which later involved the ear and right brachial areas. Her teeth were again examined and pronounced good and no extractions were done. On x-ray examination of the whole mouth, eight teeth were condemned, four of which were ordered out at

once. This done, the pain in the ear, face and shoulder did not relieve as was anticipated, but the lumbar pain began to subside. Healing of the mouth progressed normally yet the pain in the head and shoulders persisted. (The teeth were removed by alveolar resection.) Two sittings under a radiant lamp failed to cause any of the pain to subside. One week after oral operation, treatment with ultra-violet ray was begun and within twenty-four hours the patient reported some amelioration of pain, first in the ear, then the shoulder and lastly over the face. The technique used was the same as used in the previously reported cases only the open method of radiation onto the wound areas was substituted instead of the use of the quartz compressor application. It was noted that the mouth tissues almost immediately took on a healthier appearance and all the acute congestion subsided. In nineteen days this patient had ten treatments, two of which were by the radiant light and eight by ultra-violet. This patient reported just previous to the opening of the school session and she had had a two months vacation without the slightest pain.

Pain about the erupting third molars, where x-ray pictured no impaction was similarly relieved in nine of eleven cases with two treatments. The other two cases required four and six treatments respectively and the application of mercurochrome to relieve the local infection which was present.

DOCTOR, HOW DO YOU TREAT HAY FEVER?

Perhaps you could gain inspiration from an excellent paper in the
July issue of the

MEDICAL HERALD
and *PHYSIOTHERAPIST*

The paper is contributed by Drs. Hollender and Cottle, Chicago,
and is entitled

TREATMENT OF HAY FEVER AND ASTHMA,
BY QUARTZ LAMP THERAPY

Send for a free copy. They will not last very long. Address

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CHICAGO, ILL.

American Academy of Physiotherapy

The organization of the American Academy of Physiotherapy was brought about by a need in this field of medicine. The aims of the organization are the standardization of the subject on a scientific basis, the prevention of overenthusiasm concerning methods which have not been thoroughly proved, and the bringing of physiotherapy into its proper place in the various departments of medicine.

The academy is composed largely of medical men who were recognized for their ability in physiotherapy during the world war. It is most fitting, therefore, that the head of physiotherapy in the Army Medical Corps should be chosen as president of the organization, Colonel Frank B. Granger, of Boston. The following excerpt is taken from his address before the first convention of the American Academy of Physiotherapy:

The academy has been organized along broad lines. Provisions have been made for sections such as hydrotherapy, massage, muscle training, physical education, electrotherapy and mechanotherapy. In addition, general sessions will coordinate all these various branches into an intelligent and coordinate whole as an adjunct to all other medical and surgical measures in the treatment of pathological conditions. When this shall have been accomplished the challenge of the cults will have been answered.

In order to accomplish this the support of physicians of the highest professional standing must be enlisted. Therefore it has been proposed to have as associate members those who, while not actually practising physiotherapy, recognize its value and prescribe it for selected cases. This list should and will include the leading men in medicine and surgery.

For active members the test should be professional standing, scientific knowledge of physiotherapy as well as of medicine in general, personality and adequate experience. The standard of admission should be so high that the acceptance of a candidate would at once stamp the applicant as a sound, safe and scientific physician.

The high standard of work done by the members of the organization was revealed in the papers read at Atlantic City during the convention in May. Among the subjects discussed were: Treatment of tuberculous joints and other bone lesions, physiotherapy in reconstructive surgery, the various aspects of ultraviolet rays including physics and the effects on blood chemistry, tuberculous and other conditions, various aspects of electrosurgery and hydrotherapy, while physics in medicine and diagnosis from various angles were carefully discussed.

The next annual meeting of the academy will be held in the Copley Plaza Hotel, Boston, Mass., October 15th to 17th, when technic in various sections of physiotherapy will be clinically demonstrated in the Boston City Hospital by men prominent in these departments.

(From Med. Jour. & Rec.)

Industrial Physiotherapy

By EMILE C. DUVAL, M. D.

The after-treatment of industrial surgical cases affords a large field for the use of physiotherapy. There is no question as to the earlier termination of disability where proper physiotherapeutic measures have been used.

We have at our command today various appliances and modalities, which, when properly used, are very efficacious in helping to shorten the period of disability, and among these we have diathermy, negative galvanism, the faradic current, heliotherapy, hydrotherapy, and, of course, massage and manipulations.

Success in this, as in any other branch of medicine, depends, first of all, on the proper diagnosis, the knowledge of the pathology existing, and then the modality indicated, and the proper application of that modality.

There are a great number of the human ailments that are more or less amenable to physiotherapy, and I might enumerate here a few that we find frequently in the treatment of industrial cases. The sequelae of infectious processes (in the industrial world, mostly in the hand and arm), synovitis, bursitis,

sacroiliac conditions, terminal nerve injuries, after-treatment of fracture cases, neuritis (traumatic) and many other conditions, are all more or less successfully treated by physiotherapy.

There are no hard and fast rules in this form of treatment, any more than there are in other forms of treatment, and as every case is a law unto itself, you will by experience evolve methods in the application of modalities of which we know little today. We are constantly hearing from physicians who have improved upon some modality and its mode of application.

In the application of diathermy, we use a number of different electrodes, the metal electrodes consisting, some of them, of tin, and others sheet lead, and the mesh electrode. In articular and peri-articular conditions, we use an electrode of block tin wrapped in cotton, which is held onto the tin by an ordinary bandage. This electrode is soaked in a normal salt solution and then applied. In the treatment of a knee case, for instance, a small electrode of this type measuring approximately four square inches, is placed on each side of the joint, and the current gradually increased to the point where your meter shows a reading of 800 milliamperes. If the case to be treated (we are still referring to knee cases) shows indications of strong adhesions and fibrous formation, a larger electrode of the same type is used, one electrode being placed at least three inches above the knee joint on the anterior surface of the limb, and the other on the posterior surface, and about three inches below the popliteal space.

Cases of bursitis are best treated with the dry block tin electrodes. We have had a number of sub-deltoid cases recently that responded to diathermy when other therapeutic measures failed.

After treatment in cases of fractures of the shaft of long bones, when diathermy is indicated, the cuff method of applying the electrodes is favored by many physiotherapists.

The time necessary for successful treatment with diathermy is approximately one hour, and the amount of current to be used is entirely dependent on the size of the area to be treated.

(Reprinted from "Physiotherapeutic Lectures, Second Edition")

Complete Program of the 4th Annual Physiotherapeutic Convention

For the convenience of the specialist, the program, as will be noted, has been so arranged that the subjects in which he is especially interested come on consecutive days. Twenty-five minutes of the time allotted to each subject will be given to the lecture, and five minutes to discussion led by the chairman of the session. Where necessary, special arrangements will be made for additional time for discussion.

Lectures

Monday, October 12th, 1925

- 9:30 to 10:00 A. M.—“Why I Use Ultra-violet Energy from Quartz Mercury Vapor Lamps.”
By LEO C. DONNELLY, M. D.
- 10:00 to 10:30 A. M.—“Galvanism—What It Is and Its Accomplishments in a Curative Way.”
By J. U. GIESY, M. D.
- 10:30 to 11:00 A. M.—“Principles of Hydrotherapy.”
By CHAS. E. STEWART, M. D.
- 11:00 to 11:30 A. M.—“Diathermy in Arthritis.”
By ARTHUR E. JOSLYN, M. D.
- 11:30 A. M. to 12:00 Noon—“What Physiotherapy May Do to Aid Orthopedic Surgery.”
By F. H. EWERHARDT, M. D.
- 12:00 Noon to 2:00 P. M.—LUNCH.
- 2:00 to 2:30 P. M.—“Physiotherapy for the General Hospital.”
By E. C. HENRY, M. D.
- 2:30 to 3:00 P. M.—“The Mouth—Its Possibilities as a Field for Physiotherapeutic Treatments.”
By WILLIAM A. LURIE, M. D.
- 3:00 to 3:30 P. M.—“Physiotherapy in a State Hospital.”
By J. C. ELSOM, M. D.
- 3:30 to 4:00 P. M.—“Principles of Light Therapy.”
By ELKIN P. CUMBERBATCH, M. D.

Tuesday, October 13th, 1925

- 9:30 to 10:00 A. M.—"The Role of Physiotherapy in Defective Hearing."
By M. H. COTTLE, M. D.
- 10:00 to 10:30 A. M.—"The Application of Physiotherapy to Eye, Ear, and Throat Conditions."
By HARRY M. THOMETZ, M. D.
- 10:30 to 11:00 A. M.—"Electrocoagulation of Minor Malignancies."
By A. L. YOCOM, JR., M. D.
- 11:00 to 11:30 A. M.—"Direct Current Coagulation in Cancer."
By G. BETTON MASSEY, M. D.
- 11:30 A. M. to 12:00 Noon—"Electrocoagulation in Malignancy of the Accessible Cavities of the Body."
By GUSTAV KOLISCHER, M. D.
- 12:00 Noon to 2:00 P. M.—LUNCH.
- 2:00 to 2:30 P. M.—"When Shall We Treat the Painful Point?"
By CURRAN POPE, M. D.
- 2:30 to 3:00 P. M.—"Electrocoagulation of Tonsils."
By RAYMOND F. ELMFR, M. D.
- 3:00 to 3:30 P. M.—"Electrocoagulation of Surface Malignancies."
(Illustrated with lantern slides.) By T. HOWARD PLANK, M. D.
- 3:30 to 4:00 P. M.—"Surgical Diathermy."
By W. B. CHAPMAN, M. D.
- 4:00 to 4:30 P. M.—"Light in the Treatment of Infection."
By E. C. HENRY, M. D.

Wednesday, October 14th, 1925

- 9:30 to 10:00 A. M.—"How I Use Ultra-violet Energy from Quartz Mercury Vapor Lamps."
By LEO C. DONNELLY, M. D.
- 10:00 to 10:30 A. M.—"Arthritis."
By MILES J. BREUER, M. D.
- 10:30 to 11:00 A. M.—"Report of Metastatic Carcinoma of the Liver Relieved by Diathermy."
By ALBERT F. TYLER, M. D.
- 11:00 to 11:30 A. M.—"Diathermy—Its Principles and Application."
By ELKIN P. CUMBERBATCH, M. D.
- 11:30 A. M. to 12:00 Noon—"Medical Diathermy in Infections of the Genitourinary Tract."
By GUSTAV KOLISCHER, M. D.
- 12:00 Noon to 2:00 P. M.—LUNCH.
- 2:00 to 2:30 P. M.—"Physiotherapy in Internal Medicine."
By GEORGE W. FUNCK, M. D.
- 2:30 to 3:00 P. M.—"Principles Underlying the Clinical Application of Physiotherapeutic Agents in Hay Fever and Asthma."
By A. R. HOLLENDER, M. D.

- 3:00 to 3:30 P. M.—"The Value of Physiotherapy in Medicine and Surgery."
By ARTHUR E. JOSLYN, M. D.
- 3:30 to 4:00 P. M.—"General Principles of Treatment in Pulmonary Tuberculosis."
By ROSWELL T. PETTIT, M. D.
- 4:00 to 4:30 P. M.—"Diagnosis of Intestinal Toxemia and Treatment by Physical Means."
By FREDERICK H. MORSE, M. D.

Thursday, October 15, 1925

- 9:30 to 10:00 A. M.—"Carcinoma of the Uterus—Treatment by Physical Means."
By ALBERT F. TYLER, M. D.
- 10:00 to 10:30 A. M.—"My Observations in European Physiotherapeutic Clinics."
By DISRAELI W. KOBAC, M. D.
- 10:30 to 11:00 A. M.—"Physiotherapy in Treatment of Gynecological Conditions."
By FRANK H. WATKE, M. D.
- 11:00 to 11:30 A. M.—"Diathermy in Gynecology."
By W. B. CHAPMAN, M. D.
- 11:30 A. M. to 12:00 Noon—"Diathermy in Medical Kidney Diseases."
By GUSTAV KOLISCHER, M. D.
- 12:00 Noon to 2:00 P. M.—LUNCH.
- 2:00 to 2:30 P. M.—"Physiotherapy in Industry—Its Economic Value."
By EMILE C. DUVAL, M. D.
- 2:30 to 3:00 P. M.—"Uses of Physiotherapy in Industrial Surgery."
By CLARENCE M. WESTERMAN, M. D.
- 3:00 to 3:30 P. M.—"Ionization in Surgical Tuberculosis."
By G. BETTON MASSEY, M. D.
- 3:30 to 4:00 P. M.—"Diathermy in Chronic Disorders."
By CHAS. E. STEWART, M. D.

Friday, October 16, 1925

- 9:30 to 10:00 A. M.—"The Tonic Effects of Ultra-violet Radiations in Children."
By ISRAEL L. SHERRY, M. D.
- 10:00 to 10:30 A. M.—"A Discussion of Wave Lengths."
By T. HOWARD PLANK, M. D.
- 10:30 to 11:00 A. M.—"Heliotherapy in Tuberculosis."
By ROSWELL T. PETTIT, M. D.
- 11:00 to 11:30 A. M.—"The Quartz Light—A General Consideration."
By J. U. GIESY, M. D.
- 11:30 A. M. to 12:00 Noon—"Direct Current Therapy."
By FREDERICK H. MORSE, M. D.
- 12:00 Noon to 2:00 P. M.—LUNCH.

2:00 to 2:30 P. M.—"The Actinic Ray in General Practice."

By WM. E. HOWELL, M. D.

2:30 to 3:00 P. M.—"Galvanotherapy with Electrical Diagnosis."

By ELKIN P. CUMBERBATCH, M. D.

3:00 P. M.—Valedictory.

By CURRAN POPE, M. D.

Clinics and Discussions

Each morning and afternoon during the Convention, Clinics and discussions on allied subjects will be held in special rooms on the mezzanine floor of the Drake and at various Chicago hospitals. Some thirty of these have been scheduled thus far, and more will be arranged during the Convention to meet the needs of attending physicians and surgeons. A complete program of these Clinics and discussions will be presented to every visitor upon registration.

Applications for accommodations at the Drake and other hotels will of course be filled in the order of their receipt. It is suggested, therefore, that those who plan to attend the Convention notify the sponsors as early as possible.

Special Railroad Fares

Reduced railroad fares at the rate of one and one-half fares for the round trip to Chicago, have been granted for Fellows and members of their families. Those who register may apply for "certificates" when buying their tickets to Chicago. Further information will be given by the Secretary.

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CHICAGO, ILL.

Electrocoagulation in Surgery

By WILLIAM D. McFEE, M. D.

Boston, Mass.

To practice surgery successfully with the high frequency current, one must first have a satisfactory equipment; there is a great deal of high frequency apparatus now in the market, good, bad and indifferent. In selecting the apparatus which he is to use one should make a thorough investigation and try to determine just what is best for the particular work which he intends to accomplish; too much reliance should not be placed on the statements of the manufacturer or the salesman whose chief object is to effect the sale of his goods.

For the purposes of electrosurgery an apparatus should be obtained which has a constant and consistent output of current, and which will produce the required quality of spark or contact heat effect. For all round purposes of electrosurgery one of the ordinary oil immersed transformers made by a reliable concern is to be preferred; of these there is the large type and the small, which is portable. Of the portable machines very few are reliable for heavy work, such as the treatment of large, thick growths.

The spark gap which regulates the quality and volume of the electrical discharge is a very important part of the apparatus; it has to be cleaned and adjusted from time to time, so that some attention should be paid to this in choosing an apparatus for our use.

The best results in this work, particularly in those cases of inaccessible growths, will be obtained by the joint efforts of the surgeon skilled in the knowledge and use of knife surgery, and the surgeon having similar knowledge of and skilled in the surgical use and action of electricity. To know when to do and what to do under particular circumstances with either or both of these methods requires much painstaking study and observation and much practical experience.

In the operation for the removal of cancer, the following technic has been successfully employed by the writer:

An active electrode, consisting of a surgical knife, fitted in

an insulated handle, is used in contact with the tissue to be removed. A large indifferent metal electrode is applied to some opposing surface, the patient under general anesthesia. The current used is that delivered from a good high frequency apparatus of the D'Arsonval type which will deliver a high milliamperage and remain constant in action. The current is turned on by an assistant and gradually increased until coagulation appears, as shown by the cooking of the tissue. The knife, which is inserted just beyond and below the margin of the growth, is then gradually moved through the circumference with a rotary motion, the growth being lifted with the other hand by means of a suture imbedded in the structure or by forceps. As it becomes separated this is continued until the growth is entirely removed. If conditions and technic are right, no bleeding should result and a clean, seared surface is assured. Very little if any pain follows, and a superficial slough occurs.

The method of electrocoagulation is adapted to a great variety of lesions and growths in many parts of the body, and my interest has been particularly attracted to the good results obtained in the treatment of a number of cases similar to the following:

CASE I.—J. S., aged eighty, was operated on by me for the removal of a papillary carcinoma, about the size and thickness of an English walnut, at the base of the tongue, according to the following technic: The patient was anesthetized with ether, the head being raised and the mouth propped open with a mouthgag placed in the opposite side of mouth; the tongue was held in position by a long suture passing through its centre; the cheek was divided by a lateral incision extending from the angle of the mouth to a point midway to the angle of the jaw, thus exposing the growth which was removed by cutting it away with a knife electrode according to the method of electrocoagulation previously described. There was no bleeding, as all vessels were immediately closed off by the heat from the current as the operation proceeded. The surface left, after removal, was gone over by the desiccation spark and the line of demarcation was well beyond the diseased tissue. The absence of bleeding makes it much easier to visualize just what is taking place in

the operative field, and we are thus able to perform our work with more definite accuracy. By this method we are also more sure of destroying malignant cells which may be at some distance beyond the growth, thus diminishing any tendency toward recurrence.

CASE II.—R. W., aged fifty-five, was operated on by me two years ago for the removal of an extensive leucoplakia involving the cheek adjacent to the left lower jaw; this case had been previously treated by radium for one year with no result except that the disease was much aggravated, the patient suffering considerable pain after each application. The radium treatment in this case was given by a physician who was skilled in its use through many years' experience. The diseased tissue was removed by electrocoagulation; the indifferent metal electrode, size eight by ten inches, was placed under the shoulders and the surgical knife, in an insulated handle, was used as the active electrode; this was carried around the growth beyond its margin, the growth being gradually lifted from its bed as it was separated by the current contact. Sloughs covered all the coagulated area, which is usual, and these separated in about two weeks. During this time the patient was able to be about every day, had very little discomfort, required no narcotics, and had no blood loss during or after the operation. Up to the present time the area treated has held its full degree of improvement.

Malignant conditions involving the mucous membranes, as cancer of the tongue, leucoplakia, etc., usually respond very little if any to treatment by x-rays or radium alone, but remarkable results are secured when electrocoagulation is used followed in some cases by ultra-violet radiation or x-ray. In coagulating tissue which is close to bony structures care should be exercised not to coagulate deeply enough to destroy the periosteum, as it takes considerable time, even many months in some cases, for this to heal. The entire bone structure may be destroyed when necessary. Caution should also be exercised in all these treatments to see that the indifferent electrode closely approximates the skin surface; it should be held in place by a bandage preferably of elastic material, so that if the patient moves it is not

so easily dislodged. Very severe burning may result from loose or improper electrical contact due to the arc formed in the air space between the electrode and skin; good electrical contact therefore must be maintained throughout the entire operation.

Electrocoagulation, if properly performed, should be followed by no surgical shock, no hemorrhage, and no loss of blood during or after the operation. In treating growths in the mouth, sometimes our coagulation will not go beyond the point of actual contact, and it is well to watch these cases during the sloughing process so as to guard against possible bleeding when the slough begins to separate; this, however, will very seldom occur. While the operation of electrocoagulation is going on, if any bleeding should occur, it may be immediately controlled by applying the active electrode to its source.

While the foot switch may be used by the operator to turn the current on and off, it has the disadvantage of dividing his attention between his hands and feet also, when using the foot switch, the current strength cannot be regulated; so that for the ordinary purposes of any electrocoagulation operation the aid of a good assistant, stationed at the apparatus, who can quickly change the control switch of the transformer so that it will deliver a greater or less amount of current, changing at once when signalled by the operator, gives the most satisfactory results.

The operator may disregard any meter reading when using electrical currents to coagulate, as his best guide is his observation of the changes taking place, or in other words, the reaction in the destroyed tissue. The amount and character of current used, together with the time of its application, must depend largely on his knowledge gained from previous experience.

The dissection of the growth by using the high frequency current with the spark gap in circuit and the surgical knife for the active electrode will certainly produce some most interesting results.

I believe this work has a wonderful future field of usefulness, as it will no doubt be given increased attention by those in our profession who are qualified to develop its many important qualities.

(Abstracted from Med. Jour. & Rec. July, 1925)

Arthritis

Arthritis is essentially an inflammation of an entire joint. It may be acute or chronic, the acute stage lapsing naturally into the chronic when the local pain is treated without due attention to the basic causes.

Unquestionably the most important feature of the diagnosis and treatment of any case of arthritis is the discovery and the removal of these underlying causes. There is a source of toxic poison somewhere in the system of the patient suffering from arthritis. Find it, and you have taken the first step toward relief.

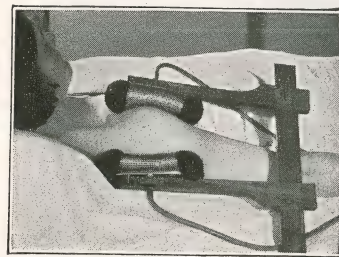
The colon is always to be suspected. Decayed teeth are often at the root of the trouble, as is sinus trouble, or indeed any source of toxins. The genital organs should always be thoroughly examined, and the patient examined for indication of specific disease. If this is present, treatment must be instituted to clear it up before the arthritis can be brought under control.

The acute stage frequently follows exposure to cold and dampness, and these conditions are sometimes erroneously accepted by the patient as the cause of the disease. As a matter of fact, they have merely served to bring the trouble to a focus.

After the cause is removed, diathermy treatment may be instituted in all cases, and is accepted by physiotherapists as the most satisfactory method of curing the acute disease and arresting it in the chronic stages.

With diathermy we can produce an active hyperemia in the diseased joint, hyperemia being one of nature's methods of overcoming a pathological condition, thus reducing congestion and having a tendency to absorb soft exudates.

Physiotherapy in arthritis is no longer an experiment, its therapeutic value has been proven beyond a question of a doubt. It now ranks with medicine and surgery as a therapeutic agent.



Application of Electrodes to Shoulder in Arthritis, by means of Diathermy Clamp.



Arthritis of Shoulder

This is a condition frequently met with in medical practice, and one in which diathermy treatment is of exceptional value. Electrodes are applied as shown in the illustration, large tin plate or mesh electrodes on both chest and back near shoulder, and mesh cuff electrode on upper arm. Diathermy clamp with mesh sponge electrodes, shown on preceding page, may be used if desired. Treatment given as described on next page.

Treatment of Arthritis

Diagnosis—Arthritis of shoulder.

Symptoms—Pain, tenderness.

Treatment—Medical Diathermy.

Milliamperes—1200 to 2000.

Method—Plate beneath shoulder, mesh over intra-clavicular space, both on one pole, mesh cuff on upper arm, on other pole.

Time—Thirty minutes.

Indications—All cases.

Contra-indications—None.

(Reprinted from "Diathermy Therapy," Published by H. G. Fischer & Company, Inc.)

Electrotherapeutic Apparatus

By WILLIAM MARTIN, M. D.

Atlantic City, N. J.

To the Editor: In The Journal, June 20, is a question asked by Dr. S. B. Koory of Schuyler, Neb., relative to the value of the various electrotherapeutic apparatus. In reading this over, one gains the impression that the high frequency apparatus is fitted or used mainly for fulguration, desiccation or electrocoagulation, the answer merely mentioning diathermy and autocondensation. It is difficult to give a detailed answer to such a question, but it might be well to stress the value in other directions, as, for instance, diathermy and autocondensation in the many metabolic conditions which are peculiarly amenable to electrotherapy properly applied, and for which drugs do so little. Other modalities as well are valuable, such as the static and constant currents, actinic and radiant energy.

Naturally, the salesman is commercial, and too many physicians permit him to give all the education they ever receive before taking up the work. I feel that we cannot too well equip ourselves with the proper knowledge of the physics and therapeutic applications of the currents before starting out to cope with the ills of mankind. Our incompetence in the past has had largely to do with the ban on electrotherapeutics under which it labored for many years.

(From Journal A. M. A. July 11, 1925)

Quartz Lamp Therapy in Oral Conditions

By LOUIS B. LIPPMAN, D. D. S.
New York City

From the Dental Department Mount Sinai Hospital

Quartz light therapy is being used by physicians with marked success, especially in the treatment of skin diseases and chronic suppurating conditions. Its application has even been successful in the treatment of certain types of baldness. The results obtained with the quartz lamp at the Naval Hospital, Brooklyn, N. Y., led the writer, while stationed there, to attempt its use in oral conditions. Suitable applicators were designed, and a series of cases, ranging from simple gingivitis to morbid pyorrhea, were placed under treatment. In those cases where much loss of process existed no marked change was noted in the firmness of the teeth. But in all the cases treated, all purulent discharge was stopped and the gums resumed a healthy tone. Bacteriologic examination exposed the presence of Vincent's bacilli, which proved negative after the fifth treatment in the less severe cases, and after the tenth in the worst.

At that time treatment was commenced with a one-minute exposure, and increased daily by one minute for four days, after which five-minute exposures were made. Since then the light has been applied in cases other than pyorrhea, such as Vincent's Angina, cellulitis, periostitis, neuralgia, post-operative pains, and in all post-operative procedure about the mouth, with most gratifying results.

Treatment must be intensive while it lasts. Since it is not practicable in private practice for most patients to appear daily for treatment, it has been necessary to somewhat alter the technic. Unfortunately, no definite law can be made for the length of exposure. People of light complexion will react more readily than those who are dark. It is necessary that the operator depend a great deal on his own judgment. It is best to start with short exposures and gradually work up to longer ones.

The penetration of the rays is dependent on the following factors; distance at which the applicator is held from the point of application, current strength, and length of exposure. Where deep penetration is desired, as in pyorrhea, abscess conditions,

periostitis, etc., the applicator is brought into contact with the tissues under pressure, causing dehematization, and treatment is begun with a two or three minute exposure, and each successive treatment is increased by two or three minutes until five or eight minutes are given. In exposing open wounds in the mouth to the rays, the applicator is held from one-half to one inch from the wound and treatment may be begun with three or four minute exposures and be gradually increased up to ten minutes.

The moist mucous membranes will stand a greater exposure than the skin. Therefore, when the rays are applied externally, the applicator is held from three to four inches from the skin, and two to four minute exposures are usually sufficient.

Reaction occurs within about five hours after exposure and manifests itself in a slight reddening of the skin, growing more tan with each successive exposure, simulating a sunburn. After treatment is stopped the skin will peel and gradually reassume its normal color.

Too great an exposure may result in severe reactions and form vesicles on the mucous membrane or a painful burn on the skin. The pain and discomfort are temporary and usually disappear in two or three days. If a burn occurs, treatment should be stopped until the burn is healed, and then resumed with shorter exposures. Coating the burn with vaseline will hasten recovery.

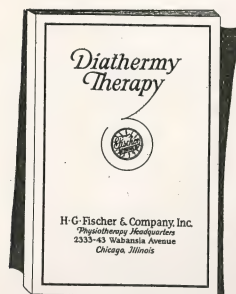
In conclusion it may be said that ultra-violet ray therapy has a distinct field of usefulness in the treatment of oral conditions, and that the beneficial effects derived therefrom are dependent on the following factors:

- (1) It is germicidal in action.
- (2) It stimulates cell-activity, thereby promoting phagocytosis and the processes of metabolism.
- (3) It exerts an oxydizing action on the blood.
- (4) It eliminates to a great extent the use of chemicals which, besides being germicidal, are also cytotoxic.
- (5) It produces an analgesic effect on terminal nerve fibres.
- (6) Its proper application involves no pain or discomfort for the patient.

(Abstracted from the International Journal of Orthodontia)

"Diathermy Therapy"

An Instructional Book for Physicians



This book of 124 pages, profusely illustrated, contains a full discussion of all the modalities used in diathermy therapy. In addition, there is an A to Z list of indications and treatments, both medical and surgical. Each subject is discussed, and technic given for diathermy treatment. The application of electrodes is shown by actual photographs taken under the supervision of physicians widely experienced in the use of electro-therapeutic

modalities. Flexible binding. Price, \$1.00.

Send Your Order to Educational Department,

H. G. Fischer & Company, Inc.

Diathermy in Gonococcal Infection

Review of a monograph by E. P. Cumberbatch, M.A., B.M., B.Ch. Oxf., M.R.C.P., and C. A. Robinson, M.B., B.Ch., D.M.R.E., Camb.

This admirable monograph records the results obtained by the writers in the treatment of gonococcal infection (with or without complications) by diathermy. The treatment is described in detail and the facts are presented so moderately as to leave no doubt in the mind of the unbiased that diathermy in the hands of careful experts has a wide field of usefulness in the treatment of these conditions. The authors very wisely do not claim absolute cure as inevitable after a course of treatment by diathermy, but their cases quoted—with clinical notes before and after treatment—are in almost every case highly satisfactory.

An appendix describes five cases of arthritis where the cervix uteri seemed to be the focus of infection, but where gonococcal infection was not proved by pathological tests; these cases

showed gratifying improvement after application of diathermy to the urethra and cervix, and should stimulate practitioners who have patients suffering from arthritis to have a pelvic examination made in every case where the primary focus of infection has not been satisfactorily discovered.

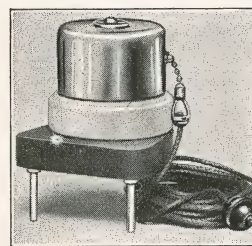
(From *The Lancet*, July 4, 1925)

Dr. Cumberbatch will lecture at the Fourth Annual Physiotherapeutic Convention on October 12th, 14th, and 16th. Full program of the Convention is given elsewhere in this book.—Editor.

Annual Meeting of American Electrotherapeutic Association

All legally licensed physicians are cordially invited to attend the 35th Annual Meeting of the American Electrotherapeutic Association to be held at the Hotel Drake, Chicago, September 15-18, 1925.

Breuer Safety Switch



The terminals of this switch are made to fit the foot switch openings on all Fischer Diathermy Outfits. The switch operates with a pull cord, just like an electric light socket, so that either the physician or the patient may turn the current on or off in a moment. Patients like to feel that they can turn the Diathermy current off, if "anything should happen" while the physician or the nurse is temporarily absent. This switch gives them a feeling of perfect safety.

No. 86, Breuer Safety Switch, complete with insulated pull cord. Each\$5.75

Diathermy to Fingers — Simple Method

By A. B. FISCHER, M. D.
Brooklyn, N. Y.

The following is a simple method of applying the diathermy current to fingers:

Armamentaria: The auto-condensation pad, the auto-condensation handle, a strip of zinc oxide adhesive tape.

The electrodes are connected to the diathermy or auto-condensation poles of the machine. The latter poles supply more concentrated diathermy effects.

The patient is placed in the sitting posture on the pad, a pillow or book is placed in the lap, and the hand electrode is then placed on that article. A foot stool may be used to prop up the knees. The finger or fingers requiring the treatment are then strapped to the handle with adhesive tape, the other fingers being flexed into the palm. The current is then applied, first weakly and gradually up to the patient's tolerance. Then the patient is informed that if the fingers get too warm, relief will be prompt if one or more of the well fingers are applied to the handle one at a time. This serves as a splendid rheostat. First one and then another should be applied if necessary and then removed if desirable.

No sparks occur if the operator is careful to strap at least one finger properly to the handle, i. e., snugly but not too firmly. The adhesive tape is a fairly good conductor and obviates sparks and poor contact.

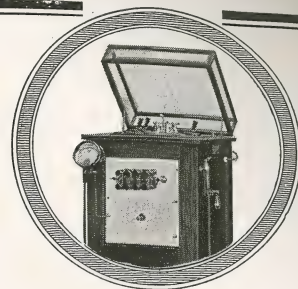
The patient is then comfortable and knows that he or she is not at the mercy of the operator, alone, but can help himself, if necessary.

After the first treatment, subsequent applications are very convenient, comfortable and effective, as well as appreciated by the patient.

This method does away with the saline solution method which is sloppy, inconvenient and not more efficient.

The amount of current can be more easily adjusted, both by patient and the operator, and is more continuously applied.

For Successful
Diathermy Therapy
You Need Adequate
Diathermy Apparatus



The Fischer "L-O" Senior Supplies Every Needed Modality

Latest product of the Fischer engineers, this remarkably complete and efficient cabinet embodies all the perfections of a long line of worthy predecessors, together with some new features of its own.

Both for Medical and for Surgical Diathermy, the "L-O" Senior delivers the correct current, properly modulated, instantly controlled. It lightens the work of physician and assistant, and is a most ornamental piece of equipment in any office.

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H. G. FISCHER & COMPANY, INC.

PHYSIOTHERAPY HEADQUARTERS

2333-43 Wabansia Ave.

CHICAGO, ILL.

A PAGE OF FUN

Mamma—"Where have you been, Johnnie?"

Small Boy—"Playing ball."

Mamma (severely)—"But I told you to beat the rug, didn't I?"

Small Boy—"No, ma'am, you told me to hang the rug on the line and beat it."

□ □ □

Maid—"I couldn't come yesterday, Miss Jackson. I was suffering that badly with pain in my chest."

Mistress—"What was it, Melissa? Dyspepsia?"

Maid—"Yes'm, it was. But the doctor, he calls it an attack of acute indiscretion."

□ □ □

"Did you ever have the telephone bell ring when you were in the bath and there was nobody else at home?"

"Oh, yes," replied the family man.

"What did you do?"

"Well, I play a little golf and I have also addressed a few remarks to a punctured tire, so you can draw your own conclusions."

□ □ □

"To what one thing do you attribute the spirit of harmony which seems to pervade your entire studio?" asked a visitor of Douglas Fairbanks the other day.

"I always try to make friends of my business associates," Doug replied, "but not business associates of my friends."

Henry, who married in New York, brought his wife home to his father's farm. It was her first experience of country life.

The first evening of her visit she looked on with interest while the cows were being milked.

"Would you like to try it?" she was asked.

The bride was doubtful. "I think I could start the milk, but I—I'm afraid I couldn't stop it."

□ □ □

Mistress—"You say you worked for the Van Trillers. Can you prove that?"

New Maid—"Well, mum, I can show you some spoons and things with their initials on them."

□ □ □

Lady—"Here, my poor fellow, is a quarter for you. It must be dreadful to be lame, but I think it must be worse to be blind."

Tramp—"It is, mum. When I was blind they was handing me counterfeit quarters."

□ □ □

A poor man who had hardly been able to supply his wife and family with the necessities of life received a substantial legacy.

"At last, my dear," he said to his wife "you will be able to buy yourself some decent clothes."

"I'll do nothing of the kind," she said. "I'll get the same kind the other women wear."

Last Call for the Sept. Physiotherapy Meeting for Physicians and Surgeons

Monday, September 14, 1925

EMILE C. DUVAL, M. D., Chicago, Ill.

"Indications for Diathermy".....10:00 to 11:00 A. M.

A. R. HOLLENDER, M. D., Chicago, Ill.

"Light Therapy in Otitis Media".....11:00 to 12:00 A. M.

EMILE C. DUVAL, M. D., Chicago, Ill.

"A Scientific Basis for Diathermy Technic"..... 1:30 to 2:30 P. M.

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

"Indications for Diathermy in Eye, Ear, Nose and Throat Diseases" 2:30 to 3:30 P. M.

Specializing in Industrial Physiotherapy, as he does, Dr. Duval is in a position to speak with an authority based on a remarkably broad experience. Physicians and surgeons desiring information as to when and how to employ Diathermy will do well to attend his lectures. Drs. Hollender and Cottle likewise have specialized extensively in eye, ear, nose and throat work and their experience, over a period of years, with physiotherapy in such disorders, qualifies them to pass on to others much interesting and valuable data.

Ample lecture-hall facilities have been provided, and visiting physicians and surgeons are assured of proper facilities for getting the most out of this splendid program. There is, of course, no fee—just come to the main office and accommodations will be provided for you.

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Physiotherapy Headquarters

2335 Wabansia Avenue, Chicago

Last Call for the 4th Annual Physiotherapeutic Convention

At the Drake Hotel, Chicago, October 12th to 16th, 1925—
the greatest gathering of its kind ever held! Lectures,
Clinics, Discussions. Further details of the program given
inside this magazine.

Conducted by Physicians, for Physicians. The program,
sponsored by the Fischer Company, will be wholly in charge
of well known physicians and surgeons. An A. M. A. card
or its equivalent will ensure admission. No charges, no
obligation. All physicians and surgeons interested in Physio-
therapy are cordially invited.

Reduced railroad fares at the rate of one and one-half
fares for the round trip have been granted. Apply for "cer-
tificates" when buying tickets to Chicago; secretary at the
Convention will give further information.

Reservations at the Drake or other hotels will be attended
to for visitors to the Convention, on request, by the

Educational Department

H. G. FISCHER & COMPANY, Inc.

Physiotherapy Headquarters

2335 Wabansia Avenue CHICAGO, ILL.

FISCHER'S MAGAZINE



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OCTOBER, 1925

CONVENTION RESERVATION CARD

The undersigned will attend the Fourth Annual Physiotherapeutic Convention at The Drake Hotel, October 12th to 16th, 1925. It is understood that I incur no obligation whatsoever by so doing.

Kindly make reservations for me at The Drake.....
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☐ Double Room

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I will arrive Oct. ----- { A. M. }
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KINDLING SPARK
WHICH MARKS THE
DIFFERENCE BETWEEN
THE LEADERS IN EVERY
ACTIVITY AND THE
LAGGARDS WHO PUT
IN JUST ENOUGH TO
"GET BY."**

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.

OCTOBER, 1925

No. 10

All Aboard for the Convention!

As this issue of Fischer's Magazine goes to press, final arrangements and last-minute details for the fourth big Annual Physiotherapeutic Convention are being taken care of. Many reservations have been arranged for at the Drake and other hotels; more are coming in hourly, and the Educational Department here at Fischer's is busy with these and other details of the Meeting.

The Program of Lectures shows no changes from that published in the September issue of this magazine. The schedule of Clinics and Discussions, now tentatively completed, is printed elsewhere in the current issue, and will be of great interest to every reader who is using the various physiotherapy modalities in his work. There will be a really impressive amount of practical work at this Convention, in addition to lectures covering all the various subjects.

As mentioned last month, the program has been so divided that the specialist may study his own subject; there are sections on Eye, Ear, Nose and Throat; Gynecology and Urology; Surgery; Dermatology and Malignancies; Internal Medicine; Industrial Physiotherapy; Miscellaneous Practice; and General Diathermy.

This is the last call, doctor! If you have not yet made arrangements to be at the Convention—and if you are interested in keeping abreast of the latest developments in Physiotherapy—right now is the time to notify your people, wire for reservations, pack your grip and—

A-l-l a-b-o-a-r-d for the Convention!

Clinics and Discussions Scheduled for the Convention

The following Clinics and Discussions have been definitely scheduled for the Fourth Annual Physiotherapeutic Convention. These meetings will be held either in special rooms set aside for the purpose at the Drake Hotel, or at various Chicago hospitals.

In the light of past experience, it has been decided that attendance at each clinic be limited strictly to the number of visitors who can see every detail of the work. To this end, each physician will be asked to register for the clinics and discussions he desires to attend, and wherever necessary the work will be repeated, more than once if need be, and each registrant will be assigned to a meeting of suitably restricted size.

Here is the list of Clinics and Discussions thus far scheduled:

Monday, October 12th, 1925

10:00 to 10:30 A. M.—“Diagnosis of Intestinal Toxemia and Treatment by Physical Means.”

By Frederick H. Morse, M. D.

10:30 to 11:00 A. M.—“Tonsil Coagulation.”

By Raymond F. Elmer, M. D.

11:30 A. M. to 12:00 Noon—“Physiotherapy in Industrial Surgery.”

By Clarence M. Westerman, M. D.

2:00 to 2:30 P. M.—“Diathermy Technic.”

By D. Frank Knotts, M. D.

Tuesday, October 13th, 1925

9:30 to 10:00 A. M.—“The Actinic Ray.” (At American Hospital.)

By T. Howard Plank, M. D., and Wm. E. Howell, M. D.

10:00 to 10:30 A. M.—“The General Use of Diathermy Current.”

By Arthur E. Joslyn, M. D.

10:30 to 11:30 A. M.—“Physiotherapy in General Practice—Applications.”

By D. Frank Knotts, M. D.

11:00 to 11:30 A. M.—“Coagulation of Tonsils.”

By Raymond F. Elmer, M. D.

Tuesday, Contd.

11:30 A. M. to 12:00 Noon—“The Application of Diathermy (Technic).”

By Emile C. Duval, M. D.

2:00 to 2:30 P. M.—“Malignancies.”

By A. L. Yocom, Jr., M. D.

2:30 to 3:00 P. M.—“Diathermy.”

By W. B. Chapman, M. D.

3:30 to 4:00 P. M.—“Surgical Diathermy.”

By Elkin P. Cumberbatch, M. D.

Wednesday, October 14th, 1925

9:30 to 10:00 A. M.—“Electrocoagulation.”

By Wm. E. Howell, M. D.

10:00 to 10:30 A. M.—“Cardiac Disease.”

By Curran Pope, M. D.

10:30 to 11:00 A. M.—“How I Use Ultra-violet Energy.”

By Leo C. Donnelly, M. D.

11:30 A. M. to 12:00 Noon—“Surgical Diathermy in Malignancies.”

By Disraeli W. Kobak, M. D.

2:00 to 2:30 P. M.—“Electrodesiccation of Tonsils.”

By Harry M. Thometz, M. D.

2:30 to 3:00 P. M.—“Prostatitis.”

By Curran Pope, M. D.

3:00 to 3:30 P. M.—“Physiotherapy in Eye, Ear, Nose and Throat Treatment.”

By A. R. Hollender, M. D., and M. H. Cottle, M. D.

3:30 to 4:00 P. M.—“Physiotherapy in Industrial Surgery.”

By Frank H. Walke, M. D.

Thursday, October 15th, 1925

9:30 to 10:00 A. M.—“The Physiotherapeutic Treatment of Gastric and Duodenal Ulcer.”

By Curran Pope, M. D.

10:00 to 10:30 A. M.—“Direct Current Therapy.”

By Frederick H. Morse, M. D.

10:30 to 11:00 A. M.—“Hay Fever and Asthma.”

By A. R. Hollender, M. D.

11:00 to 11:30 A. M.—“Diathermy in Tuberculosis.”

By Dean W. Harman, M. D.

Program Continued on Next Page

Thursday, Contd.

2:00 to 2:30 P. M.—"Tonsils."

By Harry M. Thometz, M. D.

3:00 to 3:30 P. M.—"The Mouth—Its Possibilities as a Field for Physiotherapeutic Treatment."

*By William A. Lurie, M. D.*3:30 to 4:00 P. M.—"Galvanism." *By J. U. Giesy, M. D.***Friday, October 16th, 1925**

9:30 to 10:00 A. M.—"Sciatica."

By Miles J. Breuer, M. D.

10:30 to 11:00 A. M.—"Industrial Physiotherapy."

By Emile C. Duval, M. D.

11:00 to 11:30 A. M.—"Ultra-violet in Infection."

By Dean W. Harman, M. D.

11:30 A. M. to 12:00 Noon—"Treatment of Defective Hearing."

By M. H. Cottle, M. D.

2:00 to 2:30 P. M.—"The Treatment of Genitourinary Diseases with Diathermy."

By George W. Funck, M. D.

A complete program of all Lectures, Clinics and Discussions, which is now in course of preparation, will be given to each visitor to the Convention, at the time of registration. Attendants from the Educational Department of the Fischer Company will be at hand to help you plan your week to best advantage, and no pains will be spared in the effort to make your visit a most satisfactory investment of your time.

Send Your Reservations to**Educational Department****H. G. FISCHER & COMPANY, INC.****PHYSIOTHERAPY HEADQUARTERS****2335 Wabansia Ave.****CHICAGO, ILL.**

Ionization in the Treatment of Chronic Suppurative Otitis Media

By H. W. BAU, M. D.

Practically all cases of chronic otorrhoea follow an acute suppurative otitis media which has been improperly treated, or in which there is pathology in the naso-pharynx, or in which the infection is of a virulent character. The infecting organisms, according to Phillips, are found in the following order of frequency: streptococcus, pneumococcus, staphylococcus, Friedlander's bacillus, tubercle bacillus, diphtheria bacillus, influenza bacillus, diplococcus intra-cellularis meningitidis, typhoid bacillus, bacillus coli-communis, gonococcus, Vincent's spirillum and fusiform bacillus, and the smegma bacillus. In the majority of cases of chronic otorrhoea secondary infection has occurred, and, therefore, several organisms are found, but according to Wright, the streptococcus predominates.

I am not going to discuss the pathology of this condition, as it is fully discussed in the text books, and no doubt is well known to all physicians. The diagnosis likewise will not be discussed as it is so evident.

From the standpoint of treatment, chronic otorrhoea is classified into the surgical and the non-surgical. The surgical variety we will pass over as being amenable to no other treatment outside of radical operation. We cannot expect to cure any case of chronic otorrhoea without first removing all pathological tissues in the nose and throat.

The treatment of the non-surgical cases may be classified as follows:

1. The *antiseptic* treatment embraces the use of such drugs as alcohol, phenol, boric acid, mercurochrome, acriflavine, zinc and copper sulphate, etc.

2. The *suction* treatment is advocated by Kirkendall and others who have demonstrated its value in certain cases.

3. *Pulverization* or the dry powder method has been used for a long time in certain cases where there is a large perforation

and a small amount of discharge. The results, however, with this line of treatment have been variable.

4. The *electrotherapeutic* treatment is divided into two groups: (a) ultra-violet therapy and (b) zinc ionization.

The ultra-violet treatment is advocated by Middleton, Novak, Hollender, Cottle and others. Although I have not used this method, I believe there is a good deal of virtue in it. However, the apparatus for its application is rather costly.

I now come to the method I am going to discuss, namely, zinc ionization. This method is not new, but one that has been sadly neglected by otologists. A. R. Friel in his article on "The Treatment of Chronic Otorrhoea in School Children," published in the "Hospital and Health Review" of January, 1924, reports remarkable results from zinc ionization. Likewise, reports by Joseph B. Kanter in the "New York Medical Journal," and by J. M. Barajas de Vilches in the "El Siglo Medico" are very enthusiastic for this form of treatment. Friel reports the case of a boy, age 12 years, with a cholesteatoma which cleared up by zinc ionization combined with electrolysis. John H. Harter in the "Eye, Ear, Nose and Throat Monthly" of April, 1925, concludes his paper with the following: "Zinc ionization should be universally used as a therapeutic adjunct in all cases of chronic or sub-acute suppurative otitis media which have resisted the usual time-tried methods of treatment. Contra-indications are signs of general sepsis or meningeal involvement." He tabulates his cases, which show seventy-five per cent as cured. This percentage coincides with the percentage found in the writer's cases.

The advantages of this method are that the treatments are painless, and no expensive apparatus is necessary; there is, in the hands of an intelligent person, no danger connected with it, so that treatments can be given easily by office attendants.

The theory upon which this method of treatment is based, is that the zinc sulphate is broken up by the electric current into zinc and the sulphuric radical. The latter, being electro-negative, is attracted to the zinc wire, which is electro-positive, with the formation of zinc sulphate. The zinc ions, being electro-

positive, pass into the tissues, which we have made electro-negative. Zinc is known to be one of the most antiseptic metals we have, and is known to produce a hard, firm scar. It is these two actions of zinc which produce beneficial effect in chronic otorrhoea. If we compare the antiseptic action of zinc through ionization with other antiseptics, we find that no cell can escape the action of the zinc as long as the current is turned on.

The technique I am using is as follows: the patient is placed on a table with the affected ear uppermost. The canal is dried with cotton, and then swabbed with alcohol to remove any grease that might interfere with the passage of the current or zinc ions into the cells. The canal is then filled with a one or two per cent zinc sulphate solution. (I am using a two per cent solution.) A hard rubber ear speculum, large enough to fill the circumference of the canal is inserted and zinc sulphate solution added until the speculum is filled. A zinc wire is now placed in the zinc sulphate, and attached to the positive pole of a galvanic outfit. Another large metal electrode is attached nearby on the body of the patient, and then connected with the negative pole of the machine. The current is now turned on and gradually increased to about two or three milliamperes. Sometimes the ear will be so sensitive that not more than one-half of one milliampere can be given. This is usually the case in children and a few adults. When you get from about one and one-half to two and one-half, the patient will complain of pain, in which case you reduce the milliamperage somewhat. In other words, make it absolutely painless.

You allow the current to run for about fifteen minutes, and then gradually reduce the volume. Under no circumstances, step up your current or step down your current rapidly, because if you step it up, you are going to develop pain; if you step it down rapidly, your patient is going to complain of marked vertigo. After fifteen minutes step down the current gradually until finally you are at zero, and then shut off the current. You then remove the zinc wire, remove the solution from the dropper or ear speculum, and, if you want to, insufflate a little boric acid in the ear to dry the canal.

Treatments are repeated at weekly intervals except with those who cannot stand the maximum amount of current, who are given treatments twice a week. At the beginning of the treatment, the patient usually will complain of a metallic taste in the throat, due to the escape of zinc ions through the eustachian tube. After one or two treatments, the discharge becomes thinner, and the odor disappears. As many as ten treatments may be required before the discharge ceases. If ten treatments do not help, I abandon this line of treatment.

I have tabulated here three case reports which are rather interesting. The first one is a girl, E. K., seventeen years of age, discharge from left ear for many years; had a radical mastoid operation August, 1924, but discharge persisted. Gave two ionization treatments, resulting in cessation of discharge, and improvement in hearing. I had a letter from this girl in which she says I have actually done wonders for her. She says she realizes what it means now to walk around without a running ear and to be able to hear for the first time in a number of years with that bad ear.

The second case is S. K., seventeen years of age. Had running ear for the past fourteen years, following scarlet fever. Was advised to have a radical mastoid by otologists, when treatment was of no avail. One ionization treatment on February 8, 1925, resulted in the cessation of the discharge. Patient told to return if any pus should appear, but as yet has not returned.

The third case is a child, six years old; running left ear for the past four years, following influenza. Had tonsils and adenoids removed, with various treatments, but discharge persisted. Eight treatments at weekly intervals have cleared up the discharge.

These are only examples of the results that have been obtained. When I took up this work a little over a year ago, I was rather skeptical about it, the same as we all were and still are about electro-therapeutic treatment. Today, I would like to have every one of you try the treatment, and I am sure you will get the splendid results that I have obtained. I have cleared

up seventy-five to eighty-five per cent of cases of chronic otorrhoea when all other treatments have failed.

You will find with the first treatment in children you will have a little difficulty. They are scared. They will hear the noise of the machine; they jump, but after one or two treatments, you will find they will lie quietly and take the treatment without any trouble.

Contra-indications to ionization are general sepsis and meningeal involvement. Zinc ionization can only be used in those cases where you find very little pathology in the mastoid or in the antrum. In my cases, I usually try to have an x-ray of the mastoid before I treat them with zinc ionization.

Diathermy in the Orchitis of Mumps

H. L. Fougereuse, in the Journal of the American Medical Association, during a recent outbreak of mumps among recruits for the United States navy, tested the efficacy of diathermy for metastatic orchitis. Out of 100 of these patients admitted to hospital twenty developed orchitis and were immediately treated by diathermy according to the method employed in gonococcal epididymitis and allied disorders. A Corbus clamp was used with the diathermy machine. Treatment lasted half an hour each day, and the results were invariably satisfactory. Practically all pain subsided during the first treatment, and resolution was much hastened in all cases. Fougereuse thinks that with suitable apparatus treatment of the parotids or primary focus should cut short the disease before metastases can occur.

Office and Practice for Sale

An elderly physician, ill and unable to continue work, desires to sell his office equipment, lease and practice at a very low figure. Has a long-established practise in Oklahoma community of 50,000. Is now averaging \$900 a month, all cash business, equipment includes Diathermy and Morse Wave apparatus which alone cost \$1,200. Price, complete, \$1,800 cash. For full details, write the editor, Fischer's Magazine, 2333 Wabansia Ave., Chicago, Ill.

Diathermy in Pelvic Infections

By THOMAS H. CHERRY, M. D., F. A. C. S.

New York

Diathermy can be defined as the penetration of tissue with an electrical current of high frequency that results in heat production. This thermic result develops within the tissues and at any depth when the D'Arsonval current traverses between two electrodes.

By the use of this electric agent any degree of heat can be manufactured in the human tissues from 37.5° C. to 60° C. When heat is generated from 37.5° C. to 52° C. for therapeutic purposes it is called medical diathermy; when a greater degree of heat is produced tissue destruction begins and at 60° c. is completed. The latter procedure is named surgical diathermy, or electrocoagulation.

Medical diathermy can be applied to any tissue and at any depth, provided the part treated lies between two electrodes. The current of electricity travels the shortest distance between the two electrodes, thus generating heat. When the electrodes are of the same size the heat produced in the tissues is greatest at a point midway between them. When electrodes of different sizes are used the greatest point of heat generated is nearer the small one. These principles are readily utilized in applying the maximum point of heat to different pathological sites by varying the size of the electrodes.

In surgical diathermy, or electrocoagulation, when destruction of tissue is desirable, one large surface electrode and a small active electrode are always used. This gives a maximum amount of heat at the point of contact of the smaller electrode, which, with sufficient amount of current, produces a temperature up to 60° C. with consequent destruction.

The action of heat upon diseased structures is well known. An active hyperemia is brought about, the intensity of which depends upon the degree of heat and the length of time administered. As a part of the hyperemic process a quickening of the circulation occurs and accompanying this there is a dilatation of the capillaries that allows the fluid elements of the blood

to transude into the tissue spaces. When this action takes place in the presence of inflammation there is a reduction of the stasis in the engorged bloodvessels and relief of pressure upon the nerve filaments, thereby decreasing pain. There is also a greater and quicker absorption of the exudate, for by the increased flow of blood to the pathological site more units of Nature's defense against invasion are mobilized.

The bactericidal action of heat is an important feature to be considered in diathermic applications. Heat destroys different bacteria at different degrees of temperature. Some are killed at lower degrees than others. The gonococcus is destroyed by an exposure to 41° to 43° C. for ten minutes. It is for this reason that the application of diathermy has met with the success it has in pelvic infections.

TABLE I

<i>Degree of Temperature Destroying Different Pyogenic Bacteria</i>	
Bacteria	Temperature
Gonococcus	41°-42° C.
Streptococcus	54°-60°
Staphylococcus	56°-58°
Pneumococcus	52°
Tubercle bacilli	60°
Colon bacillus	60°

In the gynecological service of Harlem Hospital we consider eighty-eight per cent of the patients suffering from adnexal inflammation to have the gonococcus as the inciting factor of their disability. During the last three months fifty-two patients having pelvic infections were treated with diathermy. Thirty-six patients had definite masses in one or both adnexa. All were admitted seeking relief from abdominopelvic pain and everyone had an endocervicitis; some had a urethritis.

TABLE II

Pathological Conditions Treated With Diathermy
Total Number of Cases—Fifty-two

Pathological Condition	Number
Adnexal disease, with masses	36
Adnexal disease, without masses.....	14
Puerperal infection	2
Endocervicitis	48
Urethritis	26
Skene's glands	6

Adnexal Disease With Masses

Eighty-eight diathermy treatments were given to this group. The lowest number of treatments given was one and the highest number was nine, to a single individual. The masses in twelve patients disappeared; in ten patients the masses were perceptibly reduced in size; in fourteen patients there was no reduction of the masses. The pain for which they sought relief was practically relieved in all cases by the first application. Two patients had recurrence of pain but were relieved by subsequent treatments. No other treatment was instituted, nor were there any analgesics administered for the control of pain. The best results in this group were obtained among those patients who had the highest number of treatments for longer periods of time (twenty-five to thirty minutes), and when the vaginal temperature was maintained at 43° to 47° C. From this group six patients were operated upon who continued to have pelvic masses and discomfort.

TABLE III

<i>Adnexal Diseases With Masses</i> <i>Total Thirty-six Cases—Diathermy Treatments, Eighty-eight</i>			
Application	Number of Treatments	MA.	Minutes
Sacroabdominal	33	1500-4000	15-30
Abdominovaginal	55	1500-2500	15-25
Raising of vaginal temperature 43°-45° C.			
<i>Results</i>			

	Number of Patients	Per Cent
Relief of pain	36	100
Recurrence of pain	2	-----
Disappearance of masses	12 }	61
Reduction of masses	10 }	

Adnexal Disease Without Masses

A group of fourteen patients had no masses but the adnexa were thickened and tender and they had the usual endocervicitis; some had urethritis and Skene's gland involvement, which stamped them as gonorrheal in origin. Of this group twelve patients were relieved of their pain; one patient did not get relief. In all, only fifteen treatments were administered averaging one to each patient.

TABLE IV
Adnexal Diseases Without Masses
Total Fourteen Cases
Diathermy Treatments—Fifteen

Application	Number of Treatments	MA.
Sacroabdominal	9	1500-4000
Abdominovaginal	6	1500-2500

Raising Vaginal Temperature 43°-45° C.

Results

	Number P.
Relief of pain occurred in	13
No relief of pain occurred in	1

Endocervicitis Group

Forty-eight patients had endocervicitis with an accompanying thick, heavy, tenacious, mucopurulent secretion. Thirty-nine endocervical treatments were made with the thermophore; however, there were fifty-five applications made with the vaginal electrode for the accompanying adnexal infection that no doubt produced a rise of temperature in the cervical tissues. In this group twenty-four were cured or showed a marked diminution of the amount and character of the discharge which had changed to a thinner and less purulent material. Twenty-four patients showed no improvement.

TABLE V

Endocervicitis Group
Occurring With Adnexal Disease of Gonorrheal Origin
Total Forty-eight Cases

Application	Diathermy Treatments	MA.	Minutes
Abdominocervical	39	500-800	15-30

Temperature of cervical canal maintained 43°-47° C.

Results I

	Number
Patients receiving two or more treatments	9
Patients cured or markedly improved	6

Results II

	Number
Patients receiving one treatment each	18
Patients cured	2
Patients improved	10
Patients unimproved	6

lying bacteria that are dormant, thus bringing about a more suitable cultural environment, thereby inciting a fresh infection.

Conclusions

From observations based upon the patients treated for pelvic infections at Harlem Hospital with diathermy the following conclusions have been reached:

1. In pelvic infections of gonorrheal origin it is the treatment of choice.
2. It relieves abdominopelvic pain almost instantly.
3. It causes the disappearance or reduction of the pelvic masses in sixty-one per cent of instances.
4. It cures or diminishes the endocervicitis in ninety per cent of cases, thus preventing a reinfection of the adnexa from the cervical canal.
5. As a preliminary treatment to operation among patients whose pelvic masses persist, it is the best agent we possess, for if sufficient treatments are administered the pus contents of the tubes are rendered sterile and innocuous. In consequence a more rapid and successful convalescence ensues.
6. In urethritis and Skene's gland infections it is the treatment of choice.
7. The employment of diathermy in postpartum or post-abortion infections cannot be recommended, as the degree of heat generated in the pelvis is insufficient to devitalize the type of bacteria producing the infection.

(From Med. Jour. & Rec., July 15, 1925)

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Diathermy in Vascular Circulatory Disturbances and Arthritis

Albert E. Flagstad, in Minnesota Medicine, says diathermy has a definite place in therapeutic medicine and is our most valuable method of using heat. It is easily applied. It is constant and can be measured.

Diathermy has a wide application. It is contraindicated in: (1) undrained pus areas; (2) when there is a danger of hemorrhage.

A great commercial enterprise has come into being. There are those who will almost persuade one to believe that diathermy is a new panacea. We have all heard startling statements; many are true, some are propaganda.

The author used it almost a year, and during this period he has given nine hundred treatments to approximately fifty patients. Most of these treatments have been given by one individual in an attempt to ascertain the true status of conversive heat, thus the conclusions in this paper are drawn from personal observation and treatment. Most important is the selection of cases—knowledge of the apparatus and its proper application. The same rule is applied here as in prescribing any drug. Time is an important factor; it is rarely a single application, but rather repeated applications that benefit. The number and duration of applications vary as to conditions encountered.

In this paper he is concerned especially with the use of diathermy in vascular circulatory disturbances and arthritis.

He has used diathermy in several different vascular circulatory disturbances.

Arteriosclerosis.—A fair number of middle-aged individuals are seen who complain of painful feet and calves made definitely worse by activity. A few of these patients present the syndrome of intermittent claudication. Examination of the extremities is negative except for varying degrees of sclerosis and cyanosis. Roentgen-ray pictures in the majority of these cases show sclerosis of the posterior and anterior tibial vessels. Several cases are briefly cited.

Arthritis.—An extensive survey of converse heat in arthritis is impossible at this time. To facilitate discussion he divides the arthritides into two general groups, traumatic arthritis and infectious arthritis.

Traumatic Arthritis.—His results in this group have been quite satisfactory.

He has had several traumatic cases that responded to diathermy after other therapeutic measures had been ineffective. Diathermy followed by manipulation and massage is of real value in the treatment of fibrous ankylosis, subsequent to trauma or infection.

Infectious Arthritis.—In eighteen of the twenty cases treated, converse heat has relieved the soreness, stiffness and pain, but in no case has its use resulted in cure. All of these cases have been of long standing; many therapeutic measures had been tried with indifferent results. All of these patients preferred this type of heat to hot packs or therapeutic lamp. Infectious arthritis of one or two similar joints is easily treated by direct diathermy; the extensive polyarthritides are a bigger problem. He has tried sedative therapy in several of these cases, but the time is too long and often the patient is exhausted before the treatment is completed. He had several cases of gonorrheal arthritis which have been benefited by diathermy. In chronic infectious arthritis he feels that diathermy is a palliative measure. It will in most cases temporarily relieve soreness, stiffness and pain, and facilitate the absorption of adhesion and increase motion. It is of primal importance to seek the focus of infection and to use all possible means to rid the patient of the infecting organism. It should be used in conjunction with other therapeutic measures. Treatment as a rule is over a considerable period of time.

He concludes as follows:

1. Painful feet and calves in the presence of sclerotic vessels are benefited and probably cured by diathermy.

2. Converse heat should be used in endarteritis obliterans before extensive surgical procedure is attempted or defeat acknowledged.

3. Diathermy has a definite place in the treatment of traumatic arthritis. It diminishes the period of disability and aids the prognosis.

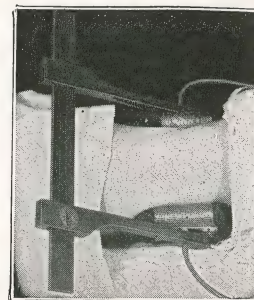
4. Converse heat is a palliative measure in the treatment of infectious arthritis. It is an important adjunct in dealing with this condition.

5. Like all therapeutic measures in medicine, results in diathermy are commensurate to its application. It must be observed with the same respect that is given any drug, and prescribed in the same careful manner. Indifferently or wrongly applied it can do no good.

(From *Amer. Jour. Phys. Ther.*, Aug., 1925)

Cellulitis

Diathermy is very valuable in this condition, i. e., it relieves pain, combats the infective agent, stimulates phagocytic activity, and hastens absorption. In pelvic cellulitis, the operator should give very mild treatments for fear of breaking down the devitalized tissue too rapidly and producing a rapidly spreading peritonitis; however, this is seldom more to be feared than the original condition. The Diathermy Clamp may be used, with very large mesh sponge electrodes front and back; or large block tin electrode may be employed. In all except pelvic cellulitis, where the physician must use his own discretion as to how rapidly and intensively he should treat the condition, the rule is to raise the milliamperage to the patient's skin tolerance and treat continuously until the condition is under control. This is usually attained in a few hours. Cellulitis, as a rule, means a very virulent and dangerous infection, and the physician is justified in giving very intensive treatments.



Application of Mesh Sponge Electrode by means of Diathermy Clamp.

(Reprinted from "Diathermy Therapy," Published by H. G. Fischer & Company, Inc.)

Value of Heliotherapy

Myers does not believe that heliotherapy is in itself sufficient in the treatment of any case of tuberculosis. However, when administered with other therapeutic procedures he has found it of tremendous value. It acts as a tonic. It induces the patient to rest quietly while the exposure is being made. In addition to the sun bath, the patient gets an air bath which is of unquestionable value. It is a tangible form of treatment—the patient sees the skin becoming pigmented and feels definitely improved from time to time. Not infrequently by the administration of heliotherapy it is possible to keep a tuberculous patient on dietetic and hygienic treatment for months after all treatment would otherwise be abandoned.

(From Journal A. M. A.)

Gonorrhoea

Heat is a specific for all gonorrhoeal infections; the only problem that confronts the physician is the effective application of diathermy to the infected area. This problem has been solved in the female; refer to the section on Diathermy in Gynecology, pp. 68 to 71. In the male, however, this problem assumes greater proportions. No procedure that will apply in all cases has been perfected as yet, but the methods mentioned below have met with more or less success in the hands of the originators.

Roucaayrol uses a special urethral electrode which is inserted inside the penis with an indifferent electrode over the abdomen. This special electrode carries a thermometer and Roucaayrol treats for twenty minutes daily with the thermometer registering 45 degrees Centigrade. He claims excellent results.

Corbus & O'Connor also use the special endo-urethral electrode and recommend temperatures in excess of 106-108 degrees Fahr., for thirty minutes. The indifferent electrode is placed over the abdomen or sacrum.

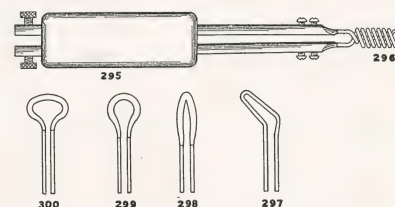
Chapman wraps the anterior third of the penis in silver-mesh cut from strips for the purpose. The penis is placed in a small saucer over the pubis to prevent short-circuiting the current through the abdomen. A large indifferent (block-tin) electrode is placed underneath the patient's hips to complete the circuit. He treats for sixty minutes daily at the patient's skin tolerance. Antiseptic liquid soap is applied freely to the active electrode to insure a good contact during the treatment.

Another method that has met with some success is to suspend the penis in a small jar containing salt solution which acts as the active electrode. In this treatment care must be exercised to prevent burns as the glans penis is almost devoid of heat fibres and unless a considerable portion of the penis is immersed in the solution, a scalding may result.

(Reprinted from "Diathermy Therapy," Published by H. G. Fischer & Company, Inc.)

Heavy Cautery Equipment

The Cautery Handle and Five Knives, as illustrated, are exceedingly sturdy and well made, and, while they are several times heavier than the cautery equipment usually furnished with combination apparatus, they are especially suited to the windings on the Fischer "LO" and "FO" Cabinets. They will be found very adaptable and satisfactory.



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297	Heavy Angular Cautery Knife.....	Pacify	.95
298	Heavy Pointed Cautery Knife.....	Packor	.95
299	Heavy Plain Loop Cautery Knife.....	Pacton	.95
300	Heavy Flat Loop Cautery Knife.....	Paddle	.95

Diathermy in the Treatment of Disease

By F. J. STANSFIELD, M. R. C. S.
London, England

Diathermy or thermo-penetration is a comparatively recent addition to the armamentarium of the medical man and particularly of the physicist. Yet it is one which has already proved its usefulness beyond all doubt, and is therefore entitled to our serious and patient inquiry.

Allow me to call your attention to some of the conditions, medical and surgical, in which diathermy is most commonly used.

Many of the painful joint conditions are relieved by the heat which can be applied by diathermy, not only to the surface but to the internal parts of the joint. Where adhesions are of recent formation it is possible that the application of diathermy may assist in their absorption.

Patients with neuritis have been considerably benefited.

It has in recent times been used in cases of acute pneumonia with very satisfactory results, giving relief to the patient and hastening resolution of the consolidated lung. It has been applied to the heart in cases of angina with great benefit. According to Nagelschmidt after a course of diathermy treatment to the heart with the electrodes placed over the heart front and back the attacks are diminished greatly both in frequency and severity.

All these applications may be regarded as medical since the conditions mentioned would in themselves be considered medical.

The surgical conditions suitable for diathermy are almost too numerous to mention. One may say that wherever it is desirable to destroy new growth, whether it be simple or malignant in nature, diathermy is the ideal method, the only proviso being that it is accessible.

Malignant ulceration can be most successfully treated by diathermy which has many points to recommend it as the method

of selection. It is thoroughly efficient and at the same time more conservative than excision.

Personally I have had a fair amount of experience in the diathermy treatment of villous growth of the bladder and I can speak with enthusiasm of the results. Some of these applications have been made through the cystoscope, whilst others have been effected through an open wound in the bladder wall after suprapubic cystotomy. In all these cases my work has been done in cooperation with the surgeon.

Another class of case that I have treated by means of diathermy is malignant growth of the tongue. Usually these cases have been pronounced inoperable before coming my way and the experience I have had leads me to regard diathermy as the method of selection in these cases. Of course, where there is secondary glandular infection, the glands must be excised in the usual manner after the primary growth has been destroyed. In my opinion it is usually desirable to proceed as I have directed, namely deal first with the primary growth and at a subsequent date excise the glands.

I have recently had an interesting case of adenoma of the rectum which the pathologist reported as becoming malignant. The patient was sent to me by Dr. Giblin who considered the condition quite inoperable in the ordinary way. It certainly would have meant a most extensive and drastic operation as the whole of the lower part of the rectum was practically filled with the growth. The patient's condition was very bad as he was suffering from general septic poisoning. His condition and his advanced age were strong contraindications to a major surgical operation.

It was decided to try diathermy as a last resort. This was carried out successfully but with difficulty owing to the inaccessibility of part of the growth. The day following the operation the patient sat up in bed, smoked a cigarette and ate quite a respectable dinner. He showed absolutely no sign of shock, indeed his general condition was so much improved that doctors and nurses were astonished.

At a later date a further application had to be given as a small

nodule of growth high up the rectum had escaped the treatment. I had a special glass speculum made for the purpose of getting at this nodule, with a fenestrated opening cut in one side. After this second operation the patient made the same satisfactory recovery.

It remains to be seen whether we have finally destroyed the growth in this case; only time can show us that. However, I am satisfied that in this, which was thought to be a hopeless case from the start, we were fully justified in our treatment if only for the relief and comfort given. The result in this case has quite convinced me that where the growth is accessible diathermy should be the method of selection.

Malignant ulceration of the cervix is a condition admirably suited to diathermy even if it is thought advisable at a later date to do a hysterectomy. Personally, my feeling is that unless glandular involvement has taken place hysterectomy is not necessary.

I have treated hemorrhoids by diathermy in numerous instances with the most satisfactory results. By this means there is no fear of hemorrhage or secondary hemorrhage, no loss of sphincter action and practically no pain afterwards. The time in hospital also is reduced in most cases to two or three days instead of two or three weeks which is a consideration of some importance to most patients.

Naevi and vascular caruncle may be treated with perfect success and the resulting scar is not as bad as might be expected.

Another condition which I have recently treated with this method, was a large papilloma growing from the external auditory canal which almost completely blocked the meatus. The final result in this instance was perfect, the resulting scar being almost imperceptible.

In conclusion I wish to point out some of the virtues of diathermy treatment in surgical cases. In the first place there is remarkably little scarring. Secondly, there is no hemorrhage. Thirdly, as the process is one of coagulation the blood vessels and lymphatics are sealed instantly and thus no fresh channels for infection are opened, a consideration which is of the great-

est importance when dealing with malignant conditions. Every operating surgeon has had the painful experience of seeing secondary deposits developing in the scar and this after every care has been taken to avoid it.

Lastly diathermy saves a great deal of suffering. The absence of pain after a diathermy operation is a feature which strikes every operator and onlooker.

(Abstracted from Australian Medical Journal)

Sunlight Promotes Health

Roll your stockings, girls, make your dresses shorter and lower in the neck; or even run around without socks and dresses, if you would be really healthy.

Dr. Leonard Hill, former member of the National Institute of Medical Research, so declared today when he advocated before the British Medical association that long trousers and collars for men be abolished. Dr. Hill wants humanity to wear fewer clothes in the interests of health, since the fewer clothes the more skin area that can be exposed to the sunlight.

Girls are healthier than men because they wear low neck dresses, short skirts and artificial silk stockings, thus absorbing more ultra-violet rays. Exposure of the legs to sunlight lessens the tendency to varicose veins, he said.

(U. N. Dispatch from Bath, England)

American Academy of Physiotherapy Meets in Boston, Oct. 15-17

The next meeting of the American Academy of Physiotherapy will be held in Boston, Mass., October 15th to 17th, 1925. For this meeting, the Academy announces a program which includes lectures on physiotherapeutic subjects of general interest, by many well-known physicians and surgeons. There will also be clinical demonstrations in physiotherapy technic, including electrosurgery, which will be given in the Boston City Hospital.

Quartz Light Therapy in Skin Diseases

By E. LAWRENCE OLIVER, M. D.

Boston

The term quartz light as generally used refers to a mercury vapor light in a fused quartz vacuum tube, the mercury making the arc. Such a lamp is very rich in ultra-violet light; and, as quartz to a large degree is transparent to ultra-violet rays, these rays emerge from the lamp and can be utilized for therapeutic purposes.

The ultra-violet rays which we are considering are sometimes called chemical rays, as they seem to have a chemical action. On the skin they produce what is commonly called sunburn. Now, naturally we would suppose that sunburn is caused by the hot waves of light; but the contrary is the truth. It is the cold, invisible ultra-violet light that produces sunburn. This is easily proved by laying a piece of ordinary glass on a portion of the skin exposed to sunlight and observing that the skin beneath the glass does not become sunburned. The glass is transparent to all the visible and heat waves of sunlight, but it blocks the ultra-violet rays. If, on the other hand, we substitute quartz glass, which is transparent to ultra-violet light, sunburn will occur.

The quartz lamps in use at present are of two types, air cooled and water cooled. With the air cooled lamps, large areas of skin may be treated with a single exposure; but, on account of the heat of these lamps, they must be used at a distance of 6 inches or more. For intensive effect on small areas, the water cooled lamps are more effective. In the water cooled lamps the quartz tube is surrounded with a water jacket of running water keeping the lamp constantly cool, so that the window of the lamp may be pressed directly against the skin, bringing the source of light only about an inch away from the skin. Not only does this have the advantage of close approximation of the light, but also the pressure of the quartz glass dehematizes the skin so that the rays have a deeper penetration.

It may well be asked whether they have any advantage over natural sunlight. One advantage of some importance is that

their light is always available. Another is that quartz light can be given in much larger dosage than is possible with sunlight; for example, a patch of eczema with leathery thickening of the skin might be so resistant that a day's exposure to natural sunlight might produce no effect, whereas with a water cooled quartz lamp an exposure of one or two minutes would very likely give the desired reaction.

The third advantage is the great saving in time. In a fraction of a minute it is often possible to produce on a localized lesion the same effect as would be produced by several hours of natural sunlight.

Conditions in Which Quartz Light Is of Value

Ulcers.—Quartz light is of value especially in those ulcers dependent on poor peripheral circulation. Of these, the most frequent to be encountered are varicose ulcers of the leg, and in many of these quartz light may be a great help by producing an active hyperemia, which seems to be a great stimulus to epithelial proliferation. A few exposures of from one to three minutes (at weekly intervals) at a distance of 10 inches from the source of light, an air cooled lamp being used, are often sufficient to clean up a foul ulcer and start proliferation of epithelium at the borders. In traumatic ulcers also, healing may be greatly hastened.

In my opinion, when skin grafts are indicated, and the local conditions are unfavorable, the use of quartz light for a few weeks previous to the operation will often greatly increase the likelihood of a successful result, by promoting the local circulation.

Birthmarks.—Birthmarks of the so-called port wine type often respond extremely well to the water cooled type of quartz lamp. The window should be pressed firmly against the area to be treated, protecting any sound skin exposed with paper or zinc oxide plaster. The exposure should depend on the case and on the strength of the lamp used. An average exposure in these cases is from five minutes to half an hour. There is no pain during the treatment other than a prickling sensation. In those cases in which before treatment the color fades readily on pressure, the results are often very good, though complete disappear-

ance is not to be expected. The desired reaction to treatment in these cases is a blistering burn, which results in tenderness but is not particularly painful. When small areas are treated, the pain following treatment rarely causes any loss of sleep. As it is usually two weeks or more before the reaction entirely subsides, it is best not to repeat the treatment to the same area in less than a month.

Alopecia Areata.—The course of this disease is so capricious that it is difficult to judge of the value of any treatment; but it is surely true that in many cases in which bald patches have existed for months or years the hair has grown in again after five or six treatments with quartz light. Certainly it seems to be good logic to assume that an active hyperemia will tend to start a new growth of hair in these cases. In alopecia of the ordinary type, premature or otherwise, the use of ultra-violet light is not advised, as permanent results have not been obtained.

Psoriasis.—This disease, as is well known, is rare on exposed parts of the body, and it is highly probable that the action of light is the principal cause of the comparative immunity of the exposed parts. It is therefore reasonable to expect improvement following exposure to sunlight or its artificial substitutes and such improvement usually results. Unfortunately, even in cases in which the disease entirely disappears, recurrences are very common.

Chronic Eczema.—In localized patches of this disease, when there is a marked thickening of the skin, the results from quartz light therapy are often remarkable; permanent cures are not uncommon. In such cases the best results are obtained from the use of the water cooled lamps, the window being pressed against the skin for from ten seconds to a minute or more. Blistering burns often give the best end-results. The reaction should be allowed to subside before the next treatment of the same area.

Acne Vulgaris.—Severe cases of this disease are sometimes benefited by the stimulation of quartz light treatments with the air cooled lamp, but the good results are usually only temporary. Roentgen-ray treatment in such cases is likely to be of greater value, as the results are often permanent.

Lupus Vulgaris.—In selected cases of this disease, quartz

light often proves of great value; in fact, in some cases it seems to be curative. The water cooled lamp should be used, and the window or quartz lens pressed against the skin for from ten minutes to half an hour, for in these cases a severe local reaction is desired. Blistering results, and it may be several weeks before the burn entirely subsides, when another treatment should be given. As with the Finsen light, results are slow; but patience is quite likely to be rewarded in cases of this intractable disease.

Lupus Erythematosus.—In this disease the production of blistering burns is sometimes followed by good results; but, on the whole, ultra-violet light treatment, in my opinion, is rarely the method of choice.

Conclusions

Quartz light is of great value in many ulcers, especially those due to poor circulation. It is of great value in the port wine type of vascular nevus and in alopecia areata. It is often a help in the treatment of psoriasis. In localized chronic eczema with infiltration of the skin, it may prove of great value. In acne vulgaris, though the light is beneficial, improvement is usually only temporary. In lupus vulgaris it is sometimes curative. In lupus erythematosus, it may cause temporary improvement.

(Extracted from Journal of American Medical Ass'n)

Evaluation of Therapeutic Appliances

At the Atlantic City meeting of the American Medical Association held in May of this year a resolution was unanimously passed by the House of Delegates requesting the Board of Trustees of the Association to appoint a "Council on Non-Medicinal Therapeutic Agents" similar to the "Council on Pharmacy and Chemistry" which has, during recent years, done most valuable work in the investigation of the nature and therapeutic action of drugs offered for sale to the profession. The resolution provides that the trustees shall appoint a council or commission of physicists, clinicians and pathologists who shall investigate non-medicinal therapeutic appliances offered for sale to the profession and shall report the results of their investigations in the Journal of the American Medical Association. The

average medical man has neither the time, technical skill nor laboratory facilities for correctly determining the value of the various kinds of lights, electrical appliances and mechanical contrivances which are from time to time offered for sale by salesmen who are in many instances none too honest in the claims made for their wares; consequently, the back rooms of doctors' offices or the attics of their barns are often found filled with discarded devices which were at one time or another much in vogue but have been discarded as worthless. To the physician this often means a considerable financial loss and to the patient, the waste of much valuable time because of the resort to some form of "treatment" before an accurate diagnosis has been made.

It is to be hoped that the trustees of the American Medical Association will wisely carry out the provisions of this resolution thereby affording the physicians the necessary knowledge as to the nature and action of these appliances which shall save them money invested in useless contrivances and their patients the expense of worthless and even harmful "treatment" as well as the loss of valuable time before the making of a correct working diagnosis.

(From Wisconsin Medical Journal)

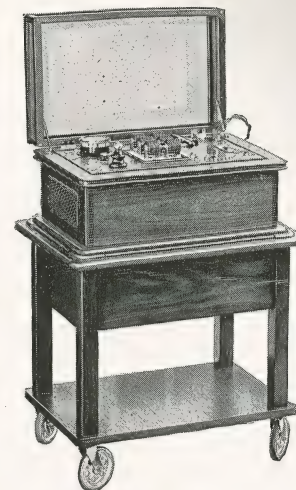
We're Off to Florida!

The editor of Fischer's Magazine has read so much about the wonders of Florida—has heard so many tales of southern splendor and sudden wealth from friends and acquaintances—that he has decided to go down there himself and look things over.

For example, a physician who has frequently contributed to Fischer's Magazine, recently made a trip to Florida on behalf of a syndicate of himself and his associates. He went to ——— well, we won't name the city! But he stayed ten days, and the trip netted the syndicate \$10,000!

We don't expect to accomplish anything of that sort. In fact, ours is in the nature of a pleasure trip, with the possibility of a profitable investment adding zest to the pleasure. As you are reading this, doctor, probably we are basking under southern skies. Should the experience prove as interesting as we anticipate, we'll tell you all about it next month.

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Fischer Type "G"
Portable Diathermy Unit
Price \$275.00**



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Hospital Cart
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The "Portable" for Hospitals

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A PAGE OF FUN

Butcher—"My son, the one that used to help me in the shop here—he's gone in for boxing. Won a championship, too!"

Customer—"Ay, I remember him. I suppose he'll have won the light-weight championship."

□ □ □

Elsie—Shall I put on my mac-kintosh and run out and post these letters, mother?

Mother—No, dear, it's not fit for a dog to be out a night like this. Let your father post them.

□ □ □

A rustic young lady, who wanted to keep up with the latest styles, went into a dry goods store and called for a pair of rolled hose.

The clerk was equal to the occasion—with a little to spare.

"Have a seat, Miss," he said with alacrity. "We roll them free of charge."

Doctor—"You have appendicitis. I must operate."

She—"Oh, doctor, will the scar show?"

Doctor—"No; not unless you join the Follies."

□ □ □

Judge—"Do you wish to marry again if you receive a divorce?"

Rastus—"Ah should say not! Ah withdraws from circulation."

□ □ □

"Ethel is terribly dumb. She thinks Mussolini is a town in Austria."

"You don't say, and where is it?"

□ □ □

"After the wreck, when your husband was drowning, did all his past sins come up before him?"

"Good heavens, no! He wasn't in the water all that time."



Amateur Angler (to guide)—
"Sa-ay, I thought you called that red thing on the line a float!"

Guide—"Sure, it's a float!"
Amateur Angler—"But the durn thing has sunk!"

Program for Our Monthly Physiotherapeutic Meeting

Monday, November 9th, 1925

WM. E. HOWELL, M. D., Chicago, Ill.

"Electrocoagulation of Minor Malignancies".....10:00 to 11:00 A. M.

RAYMOND F. ELMER, M. D., Chicago, Ill.

"Electrocoagulation of Tonsils".....11:00 to 12:00 A. M.

CHAS. H. FREDRICKSON, M. D., Chicago, Ill.

"Hemorrhoids".....1:30 to 2:30 P. M.

CARLTON L. ROWELL, M. D., Chicago, Ill.

"Diathermy in Gonorrhea".....2:30 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.

As those who are familiar with the work of these men will immediately recognize. This is a program of exceptional merit. All these men have built reputations for themselves in the very lines covered by their subjects. Physicians and surgeons interested in surgical diathermy and in gynecological work will find this meeting very well worth attending. Ample facilities have been provided so that every visitor is assured of a seat. There are no fees and no obligation is involved.

H. G. FISCHER & CO., Inc., Phone Armitage 0323
2335 Wabansia Avenue, Chicago

Program for Our
**Monthly Physiotherapeutic
Meeting**

Monday, December 14, 1925

A. L. YOCOM, JR., M. D., Chariton, Iowa.
"Electrocoagulation of Malignancies" 11:00 to 12:00 A. M.

G. W. FUNCK, M. D., Chicago, Ill.
"The Treatment of Genitourinary Diseases with
Diathermy" 1:30 to 2:30 P. M.

MR. E. W. ERIKSON, of Chicago, will discuss the practical applica-
tion and usages of Quartz Ultra-Violet Light, 10:00 to 11:00 A. M.
and 2:30 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 West-
ern Avenue Station, walk one
block north to Wabansia Ave-
nue and a short block east to
Claremont, or

BY SURFACE CAR—Western
Avenue to Wabansia Avenue,
and one block east to Clare-
mont.

of Ultra-Violet by an expert who can explain the quartz lamp
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FISCHER'S MAGAZINE



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374

NOVEMBER, 1925

NO PLEASURE IS
COMPARABLE TO
THE STANDING UPON
THE VANTAGE GROUND
OF TRUTH.

—FRANCIS BACON

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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NOVEMBER, 1925

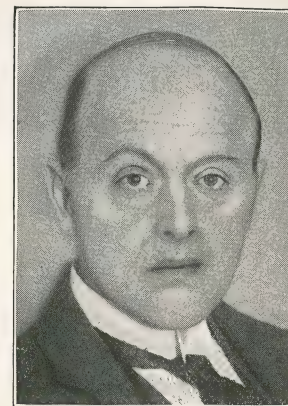
No. 11

The Convention

From Monday, October 12th, to Friday, October 16th, the Mezzanine floor of the Drake Hotel at Chicago was the scene of the most enthusiastic series of clinics and discussions it has been our privilege to witness. Down in the auditorium on the first floor, meanwhile, speaker succeeded speaker in a program that makes the Fourth Annual Physiotherapeutic Convention an epoch in the history of Physiotherapy.

Many improvements and refinements were apparent in the conduct of this year's Convention. Clinics were more conveniently arranged; every physician was given an opportunity to study intensively every subject in which he was interested. Lectures were limited to the scheduled time; but discussions on the questions raised were carried on to the fullest extent, and many a physician went back home with questions answered that have been accumulating throughout his last year of practise.

In attendance, the Convention outranks any similar gathering of physicians interested in Physiotherapy—even the tremendous gathering at the Third Annual Convention at Logan Square, last year. Physicians from forty-one states were there,



Elkin P. Cumberbatch, M. D.
of London, England

as well as representatives from Canada and the British Isles. And in this gathering of hundreds upon hundreds of earnest men—and women—there was evident an enthusiasm and a sure purpose that augurs well for the future of this branch of medical science.

Outside interest in the Convention was very keen. The press gave to the public a series of interesting reports on the various sessions. Station WGN, the Chicago Tribune radio station on the Drake Hotel, broadcast one of the afternoon lectures.

And as for the physicians who officiated at lectures and clinics, too much cannot be said of their untiring enthusiasm and their unselfish sacrifice of time and effort on behalf of their fellow physicians who came to the convention seeking knowledge of physiotherapy. The thanks of the Convention are due, in overflowing measure, to these men:

- | | |
|------------------------------|------------------------------|
| Miles J. Breuer, M. D. | D. Frank Knotts, M. D. |
| Leslie Clough, M. D. | Disraeli W. Kobak, M. D. |
| M. H. Cottle, M. D. | Gustav Kolischer, M. D. |
| *Elkin P. Cumberbatch, M. D. | Wm. A. Lurie, M. D. |
| *W. B. Chapman, M. D. | G. Betton Massey, M. D. |
| Leo C. Donnelly, M. D. | Frederick H. Morse, M. D. |
| *Emile C. DuVal, M. D. | L. M. Otis, M. D. |
| Raymond F. Elmer, M. D. | Roswell T. Pettit, M. D. |
| *J. C. Elsom, M. D. | *Curran Pope, M. D. |
| F. W. Ewerhardt, M. D. | *T. Howard Plank, M. D. |
| Geo. W. Funck, M. D. | Israel L. Sherry, M. D. |
| J. U. Giesy, M. D. | Chas. E. Stewart, M. D. |
| Dean W. Harman, M. D. | Harry M. Thometz, M. D. |
| *E. C. Henry, M. D. | Albert F. Tyler, M. D. |
| *A. R. Hollender, M. D. | Frank H. Walke, M. D. |
| *Wm. E. Howell, M. D. | Clarence M. Westerman, M. D. |
| Arthur E. Joslyn, M. D. | A. L. Yocom, Jr., M. D. |

*Also officiated as chairman of one of the sessions.

Convention Pictures Now Ready

Those visitors to the Convention at the Drake Hotel, October 12th to 16th, who would like to have a copy of the group photograph reproduced on the following page, may place their orders with the Educational Department of H. G. Fischer & Company. The pictures are 11x18½, ready for mounting, and are furnished at cost price of \$1.50 each.



"Among Those Present" at the Convention

Valedictory to the Convention

By CURRAN POPE, M. D.
Pope Sanatorium, Louisville, Ky.

Ladies and Gentlemen: It now becomes my pleasant but somewhat sad duty to bid you farewell.

The beauties and the glories of the setting sun, casting its rosy and varied iridescence over hill and dale, stilling nature's activities and calling to peace and rest, is to me one of the most beautiful of nature's moods.

"The curfew tolls the knell of parting day,

The lowing herd winds slowly o'er the lea,

The plowman homeward plods his weary way

And leaves the world to darkness and to me."

To us this is the sunset of our labor. This night of soft repose we hope is but the prelude to a day of future when we may in our active workaday lives put into practice what we have learned here.

Men and women, physicians and surgeons, become better

practitioners of the healing art when they round out their lives by giving and taking of their knowledge in friendly and active contacts, even as the rough stone is rounded in the brook by constant rolling against the other pebbles.

We leave here heartened by our contacts, ready, and better prepared to do our work, imbued with the hope that some one among us will yet further push forward into that vast continent of the unknown in medicine, the illuminating and radiant light of knowledge.

The morrow! Let us be up and doing, ready for the fray, eager to catch and lift aloft that torch that may be falling from failing hands.

We have gathered together here more than 700 strong, from forty-one states of this Union, with a representation from our friends and neighbors, Canada and England. We have accomplished, I think, much. Many conventions have I attended and I know of none in which there has been presented more or better papers or communications than in this.

This meeting is ended. We have met upon the level, we will part upon the square. Take with you all the good, use it, mould it, better it, until another time when we shall meet again, *Deo volente*. And now I bid you good-by on behalf of my confreres who have labored so hard in the preparation of their work and its delivery; and on behalf of the great commercial interest that has made this meeting possible.

May the hand of time deal gently with you, may you work, love, labor, and prosper. May the grim reaper spare you, spare you for another year and another reunion. May our motto in the days to come be "Dear God, grant us the wisdom of a loving heart that with a kind tongue we may say the right thing rightly." I bid you adieu. (Applause.)

Did You Lose Your Glasses, Doctor?

During the week of the Convention, a pair of spectacles was found in the Convention rooms at the Drake Hotel. They are being held by the editor of FISCHER'S MAGAZINE, who will gladly mail them to the owner upon request.

Convention Lecture Broadcast Over WGN

At 2:40 P. M., October 16th, the lecture on Ultra-Violet Light given by T. Howard Plank, M. D., on the floor of the Convention, was put "on the air" by Station WGN, the Chi-Tribune Radio Station on the Drake Hotel. Dr. Plank said, in part:

Ultra-violet wave lengths, commonly called ultra-violet light, are the portion of the sun's rays that produce the condition known as sunburn. The commonly known light wave lengths are those which effect the retina of our eyes; above and below these colors in the spectrum, there are other wave lengths known in the scientific world as the invisible wave lengths. The first part or near ultra-violet wave lengths, we can get from the sun provided we are away from smoke and dust, both of which filter out a large portion of these frequencies. They have very little power of penetration. All clothing is opaque to them. This is why Rollier at his sanitarium in the Swiss Alps has his children play in the sunshine in breech-clouts. It is also one of the main reasons why the Indian in his wild state seldom had tuberculosis. It is also the reason why civilized people are today putting their tubercular patients out in sunlight, which means also in the fresh air. If we could all live in the open, away from cities and crowded communities, we would not be subject to this disease. Finsen of Copenhagen was the first in recent years, 1893, to take up the scientific study of the ultra-violet wave lengths. He used the carbon arc for his source of light and by its use, he was able in tubercular cases to obtain results theretofore unknown. Its use as he developed it, was too limited to attract many in the medical profession. It remained for Haereus in Germany, to find a method of using quartz, which is transparent to the ultra-violet wave lengths as they come from the sun and it is also transparent to wave lengths very much shorter. However, had it not been for the previous discovery of Peter Cooper in the United States of the mercury arc lamps, Haereus's discovery of the fusing of quartz would have been of little value. Peter Cooper used only

glass for his lamps and these are the blue-green pipe-stem lights seen in many photographic galleries. By placing the mercury in a quartz vacuum and heating it with electricity, Haereus was able to produce wave lengths as short as the transparency of the quartz, or 1860 Angstrom units. From this time on to the present, progress has been rapid.

The medical profession has been alive to the recent discoveries in the ultra-violet field and in conjunction with the various universities in the United States is rapidly determining the limits of the ultra-violet wave lengths in the care of public health and the treatment of the sick. The present determinations are that these wave lengths are beneficial in tuberculosis, rickets and tetany, or malnutrition, for water-sterilization and many of the more prominent infections. They are being used in the industries as a definite aid in the care of the injured. Clinically, there are but two methods of producing these wave lengths. First, the various carbon arcs and secondly, the mercury vapor arcs in a quartz container. Professor Steenboch of the University of Wisconsin has quite definitely determined that the benefits derived from the ultra-violet wave lengths are due to a chemical activation of substances found within the layers of the skin. He also found that this activation was much greater when the skin was radiated with the rays from the quartz mercury arcs than when radiated from the sun, even on the brightest day in June.

Theater Installs Ultra-Violet Department

The Ziegfeld Theater, at 54th Street and 6th Avenue, New York City, has set aside a whole floor for use as an ultra-violet department, according to advices just received by Fischer's Magazine. A physician from St. Bartholomew's Hospital is in charge, and treatments are given regularly to members of the cast who are in need of them. Coryza, as is well known, responds readily to quartz-light treatment in most cases; and it is reported that all such cases at the Ziegfeld are now referred to this department.

Keep Your Leyden Jars Filled

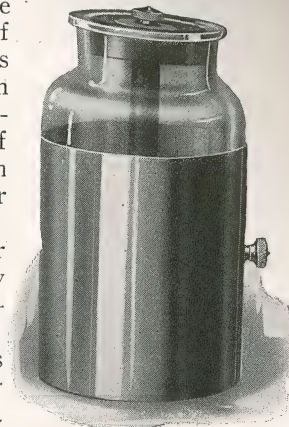
At the convention just closed at the Drake Hotel, several operators of "LO" and "FO" Diathermy Cabinets suggested that we call attention through the pages of Fischer's Magazine, to the extreme importance of having the salt and water solution in the leyden jars always up to the proper level.

It is very important that the water level always be maintained slightly above the top of the outer brass coating on the glass jars.

When in doubt, remove the caps from the four leyden jars, and, after a thorough cleaning, fill them with a saturate solution of salt water up to $\frac{1}{4}$ inch above the level of the outer brass coating. Use one-half pound table salt to each jar. The fluid should be poured into the jars to just above the top of the outer coating, and immersing the carbons will increase the level to the desired point. A film of paraffin oil on the water (about $\frac{1}{4}$ inch or so) will reduce evaporation. Should any moisture be present around the jars, dry thoroughly before using the machine.

The solution in the jars needs little attention, but it is advisable to make periodic observation to see that the level does not fall too low. Observe this every few days while the cabinet is new, and you may gradually lengthen this period from experience. Should the water level fall to or below the top of the outer brass coating, plain water should be added immediately.

If, for any reason, the solution of one jar needs replenishing, or you replace a jar, it is important that *all jars* be emptied and refilled with fresh brine as above instructed, to insure a perfect condenser balance.



Leyden Jar



Prepared
Salt No. 879

Physiotherapeutic Treatment of Chronic Gonorrhea and Its Complications

By CARLTON L. ROWELL, M. D.

Chicago, Illinois

The above title is perhaps a misnomer, because chronic gonorrhea really *is* complications. When you speak of posterior urethritis, prostatitis, vesiculitis, Cowperitis, stricture, or infection of the glands of Littre, following gonorrhea, you are really speaking of the complications of the disease.

I had occasion to do some of this work with the A. E. F. and I think that anyone who has had much experience with the old line of treatment, which consisted mostly of massage, posterior irrigations and sounds, will agree with me that it has been far from satisfactory. We realized it over there. We would treat some of these cases for five or six months and then start checking up to see if treatment could be discontinued. We would perhaps get two or three negative prostatic smears, take them off treatment for a few weeks, and then another examination would show that they were apparently right where they started.

Realizing that if gonorrhea was to be treated successfully a departure from the old line of treatment was necessary, I started using diathermy—approximately two years ago.

Diagnosis

I am not going to take up the morphology of the gonococcus, the anatomy of the parts involved, or the pathology of the disease. That can easily be learned from textbooks on the subject. But I want to go over the matter of making a diagnosis, particularly locating the seat of infection. Suppose we take an imaginary patient coming into the office and outline a plan of procedure to follow until the case is ready to be discharged.

In the first place it is very important, before starting treatment, to know what part of the genito-urinary tract is affected, and frequently this information can be gained only by a most careful examination. The first step is to strip the anterior urethra, to determine if material can be obtained for the purpose of examination. If so, a smear is made and examined. The patient is then asked to void, the first and second specimens of

urine being examined macroscopically. The glans penis is then thoroughly cleansed with alcohol, and a rectal examination is made. The condition of the vesicles and prostate is noted and material for a smear is obtained by making a vigorous, but not unnecessarily rough, massage. The urethra and the external surface having been thoroughly cleansed, we know that any pus or micro-organisms found in this material must come from the vesicles or prostate, or both.

In the absence of the gonococcus, which is rarely found either intra or extra-cellular in a prostatic smear, I give more attention to the amount of pus found than to anything else. The laboratory reports the pus as occasional (from one to three cells to a microscopic field), few (from four to seven to a field), or many (more than eight to a field). An occasional pus cell is regarded as negative, a few as doubtful, while many are considered as evidence that the condition has never been cleared up. Mixed bacteria are practically always found, but, in the absence of pus. I pay very little attention to anything but the gonococcus.

If the first examination is negative another smear is made two or three days later, and if nothing more than a few pus cells is found, a third examination is made after three or four days more, the material from the vesicles and prostate being cultured in addition to the direct smear examination. The culture is incubated for ten to twenty-one days before being discarded as negative.

At any one of these visits the patient is given a slide and told to obtain whatever material he can by thoroughly stripping the urethra immediately upon arising in the morning. Also an examination is made to determine whether or not there are any strictures. If the meatus is not large enough to admit a number 26F. acorn tip, a meatotomy wide enough to allow the passage of a number 32F. or 34F. tip is performed. The size and location of all strictures are noted.

Smears are made from two ejaculated specimens obtained about a week apart, and if all of these examinations prove negative the patient is given a provocative injection of one per cent silver nitrate solution and asked to report at the office the next

morning before urinating so that it can be definitely determined whether or not there is any urethral discharge. If there is, a smear and culture are made.

This same procedure is followed in treated cases to determine when they are ready to be discharged, except that they are told to report again after one month's rest, when a smear and culture are made from the prostate, and also from any material that can be expressed from the urethra. I go into this in such detail to stress the importance of *knowing* when a cure has been obtained, and not just guessing at it after one or two careless examinations.

Treatment

Posterior infections are treated three times a week—with diathermy, positive galvanism and sinusoidal massage. I have formed the habit of treating both vesicles as well as the prostate, whether or not they are palpable, or a history of epididymitis is obtained.

Diathermy

As a preliminary to this treatment I usually give a posterior irrigation of potassium permanganate, leaving a small amount of the solution in the bladder during the treatment. An intravenous injection of mercurochrome or acriflavine can also be given.

For giving a diathermy treatment the patient lies face down, with a piece of block tin, 6x8 inches, applied to the lower abdomen. The prostatic electrode is inserted well into the rectum and turned a little to one side to cover one vesicle. The current is turned on and slowly increased to the individual patient's point of tolerance. I have found that most of them will take 1000 milliamperes, and occasionally one will tolerate as much as 1400. After 20 minutes the electrode is turned to the opposite side and the other vesicle treated for a similar period, then the electrode is withdrawn slightly to cover the prostate for another 20 minutes, making an hour in all. Following the treatment the vesicles and prostate are gently massaged.

A variation of this treatment can be given by using a metal electrode in the posterior urethra and a piece of block tin, about 3x4 inches in size, on the back or buttocks. I have three special electrodes, sizes 22, 26 and 30F., 3 inches in length, with a slight

curve, which are made to screw onto the regular cervical electrode handle. This treatment is given for 30 to 45 minutes, and it is surprising how quickly the long posterior shreds disappear from the urine.

Galvanism

Either positive galvanism or the sine wave can be used at the next visit, two days after the diathermy treatment. Galvanism is given with any good galvanic generator, using the carbon ball electrode in the rectum and the negative electrode over the lower abdomen. I start with 8 milliamperes, increasing to 10 milliamperes for the second and all subsequent treatments. The vesicles and prostate can be treated just as with diathermy, starting with three minutes to each and increasing the time one minute at each sitting, until 7 or 8 minutes is reached. That makes 21 to 24 minutes for the entire treatment, and I have never found it necessary to go beyond that. I also massage the vesicles and prostate following this treatment.

Sine Wave

This treatment is also preceded by a posterior irrigation of potassium permanganate solution, as for diathermy. For sinusoidal massage I have been using the Morse Wave Generator with No. 7 cam, giving 44 contractions per minute. The same electrode that is used for the negative pole in the galvanic treatment is applied to the abdomen and the metal prostatic electrode inserted in the rectum over the vesicles, and prostate as before. The indirect current hook-up is made and the current increased until the contraction is felt in the rectum. The duration of each treatment is the same as for positive galvanism. None of these treatments should be pushed to the point where they cause the patient the slightest pain.

This procedure, diathermy, galvanism and the sine wave, is continued for four or five weeks, when smears are examined to determine what progress has been made. If much pus is still evident, treatment is carried on for another two or three weeks, or until a cure has been effected, as shown by repeated negative smears and cultures.

Stricture

This condition presents one of our greatest problems in treating gonorrhea. I have tried a great many things but I believe

the best results can be obtained, in the majority of cases, with a combination of negative galvanism and diathermy. Occasionally, especially where we are dealing with a vascular stricture, negative galvanism will aggravate the condition, and must be discontinued.

The size of the stricture to be treated is first determined by passing olive-tipped bougies until one is found that will just slip through. Suppose this is a number 20F. A size 22 is then attached to the negative pole of the galvanic generator and the positive electrode applied to the lower spine, with the patient in the sitting position. I use a scale calling for one-half to one milliamperes for a size 16 tip, up to four and a half to 5 milliamperes for a No. 32 tip. The bougie is introduced to the stricture and held in place while the current is turned on and gradually increased to the point desired. With only the slightest pressure the electrode will usually slip through the stricture in from two to eight minutes. If it fails to pass in that time the treatment should be discontinued and a smaller tip used at the next sitting. These treatments can be given every five or six days unless accompanied by much bleeding, in which case they should be discontinued until the urethra has had time to heal. I never increase the size of the bougie until the one used at the last treatment slips through the stricture in two or three minutes.

Following each treatment with negative galvanism 30 minutes of diathermy is given, for which I use the special electrodes already described, with a small piece of block tin applied to the back or buttocks. I find the point of tolerance to be from 300 to 900 milliamperes, depending upon how far the electrode is inserted into the urethra. In treating strictures, however, it is not essential to secure the greatest amount of heat possible, as the results are just as good when a milder temperature (103 to 105 degrees F.) is used. This treatment can also be given with a small piece of block tin applied to the under surface of the penis as the indifferent electrode.

Determining when and how to treat a stricture is a matter of individual judgment. It is said that if a stricture is of No. 26 caliber or larger it should be left alone. I believe that a No. 34

stricture in one patient can cause more trouble than a No. 24 in another. It depends upon whether or not it is harboring the gonococcus. If so it calls for treatment, not necessarily with the idea of increasing its caliber, but for the purpose of eliminating the causative organism, the presence of which can be determined in some cases only by culturing the morning drop for a period of two to three weeks. One of the most effective ways of ridding a stricture of gonococci, and this applies also to the glands of Littre, is by means of the Kohlman dilator, with mercurochrome, acriflavine, silvol, argyrol, or any drug of known value. With the patient in a sitting position the instrument is introduced and dilated to a point two sizes larger than the smallest stricture. It is held in a vertical position and the urethra filled to the meatus with the drug to be used. I use mercurochrome (one-half to one per cent), acriflavine (1-2000 to 1-500), and neosilvol (25 per cent), and usually about three such treatments of 30 to 45 minutes duration, will bring about the desired result. I use all three of these drugs in each case, applying a different one at each sitting. This treatment is still more effective if followed by 30 to 45 minutes of diathermy to the urethra.

(Reprinted from The Journal of the Indiana State Medical Association, July, 1925)

Reserve Your Copy of the Book of Lectures

The complete report of all lectures and clinics at the Fourth Annual Physiotherapeutic Convention at the Drake Hotel, will shortly be available in the form of a handsome bound volume of some seven or eight hundred pages. Type is now being set for this book, and it will be produced as soon as possible. If you would like to receive a copy, please send us your reservation now, so that we may include your order in the printing of the current edition. While we cannot forecast the cost of the book, it will be moderate for a volume of this kind, and will depend in large measure on the number of reservations received. The larger the edition, the smaller the proportionate cost.

Uses of Physiotherapy in a General Hospital

By E. C. HENRY, M. D.

Chief Surgeon Lord Lister Hospital, Omaha, Neb.

Probably two entirely different diseases will illustrate the utility of Physiotherapy in a general hospital—Carbuncle and Pneumonia. Never start treating a carbuncle until an examination of the urine and the blood have been made as to their sugar content. Often this form of infection is grafted onto a diabetic and will be fatal regardless of any kind of treatment.

A diabetic is always a poor surgical risk.

He is a bankrupt. He has no comeback.

He has no reserve; no fight in him. This being the case we are glad to have developed a method of treatment that avoids all the risk of an operation, conserves all their vitality and at the same time meets the indications locally.

First comes x-ray over the carbuncle and its immediate vicinity; then a larger area of radiant light, then directly over the inflamed part, the Actinic ray.

To prevent the absorption of the toxins, a paste of Sulphate of Magnesia and Glycerin is excellent. Hot packs of Saturated Solution of Boric Acid are most useful.

I hesitate to mention our treatment of pneumonia because of our limited experience. We have been using Diathermy for two years on our pneumonia cases with most excellent results. To make sure, doubly sure, our cases are typed, blood counts made and all the physical signs noted.

We began the treatment with diathermy with the greatest doubts. It did not appeal to us as being rational. But after its adoption by the U. S. Navy and reading Stewart's book on pneumonia, we decided to give it a trial.

Our patients are more enthusiastic than we are. The relief from pain is almost immediate. The ability to breathe comes in a few hours and the fever is lowered in ten to twelve hours.

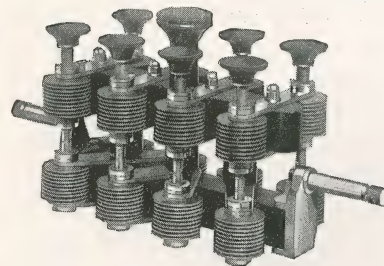
Loomis said that pneumonia was the natural way for a person over 70 to die. Many old people will go the pneumonia road but hundreds of young, strong, vigorous people can be saved by Diathermy.

Physiotherapy is a wonderful addition to our armamentarium. It must not be expected to cure or even be used in all cases. First of all, let us become skillful in diagnosis, then expert in selecting the modality indicated. Sometimes we will want strychnia, again antitoxin and at another time physiological rest or finally it may be some form of Physiotherapy.

(Abstracted from Med. Her.)

Is Your Diathermy Machine Up to Date?

There are still in existence a few of the old style *spark-gaps* which were supplied with diathermy cabinets before the invention of the vastly improved Kolischer type. If your cabinet is among the number thus equipped, we would recommend that you make the change without delay to the Kolischer Spark Gap. You will find it well worth while, both in convenience of operation and in improved efficiency of your machine.



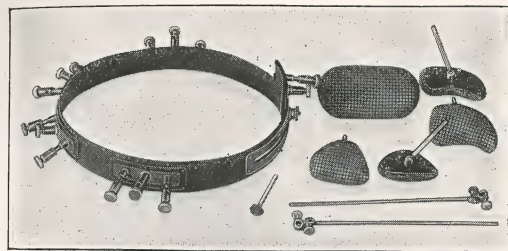
The Kolischer is a vast improvement over any other type of Spark Gap ever devised for any high frequency machine. It will fit the supports on any Fischer or Thompson-Plaster Styles "F" and "F-O" machines, as well as the Types "L," "L-O" and "Military"

models without alterations or other attachments.

This new Multiple Spark Gap is equipped with 16 Tungsten spark interrupter points, adequate copper flanging to carry away all heat, and individual control for each set of tips as well as master controller for simultaneous adjustment. Quiet, perfect control is possible at any voltage or milliamperage, more constant discharge obtained at any setting, and the regulation is gradual—as compared to the usual jumps—the utmost in utility and flexibility.

Write us for special proposition. We will cooperate with you in bringing your diathermy machine up-to-date

The Cottle-Hollender Head Band and Electrodes



This perfected head band is a wonderful help to the physician in giving diathermy treatments to the head and face. Outfit consists of headband with connections for electrodes; electrode holders, and special electrodes. Headband and electrodes are readily adjusted to give proper pressure in any combination of applications. In treating the ear, the indifferent electrode is placed anterior to the ear, while in treating the sinuses and the face the indifferent electrode is placed on the nape of the neck. Small tube electrode may be used for caloric testing of labyrinth.



Diathermy in general is indicated for the absorption of effusions and the softening of organized exudates and fibrous tissues. It is furthermore indicated in the treatment of chronic suppurations and for the relief of pain. These indications in eye, ear, nose and face affections also call for diathermy. Thus the following are conditions in which diathermy may be of great value:

Ear Conditions

Chronic catarrhal otitis media.

Chronic suppurative otitis media (non-surgical type).

Sub-acute and acute otitis media (after artificial or spontaneous rupture of drum).

Nose Conditions

Chronic sinus disease after medical and surgical measures have proved of no avail.

Eye Conditions

All conditions where heat is used frequently.

Face Conditions

Facial palsy, trigeminal neuralgia, painful teeth, sub-acute painful tonsillitis.

The Cottle-Hollender Head Band and Electrode Set is supplied complete, with electrode holders and special electrodes.

Write for full details and prices.

A. M. A. Council on Physical Therapy is Established

Morris Fishbein, M. D., Editor of the J. A. M. A., in a paper on "Physical Therapy" printed in the Journal for Oct. 3, 1925, concludes his article with this statement:

At the last annual session of the American Medical Association, held in Atlantic City, the House of Delegates, at the request of numerous members of the profession, voted the establishment of a Council on Physical Therapy, consisting of chemists, physicists, physiologists, pathologists and clinicians, who are to evaluate the actual worth of physiotherapeutic apparatus and methods, and to keep the medical public informed by regular statements of the actual truth or fallacy of such claims. At the meeting of the Board of Trustees held in Chicago early this month, a tentative list of membership for such a council was drawn up. It includes men who are leaders in the field of scientific medicine and in the specialties that have been mentioned, and representatives of the greatest universities and institutions for research in physics and physical therapy that exist in this country. Practically all of these men have volunteered to serve without a cent of compensation in order to give the medical profession unbiased and scientific statements concerning the physical therapy field. . . . And the medical profession may confidently look forward to the time when the path between the vast accumulation of discarded refuse, jumbled wires, rusted hydrotherapeutic apparatus, peculiar tables and benches, worn-out electric bulbs, and other queer therapeutic apparatus, and the path leading by simple and clean methods to honest therapy will be clear. It is significant that the American Electrotherapeutic Association chose of its own accord to ask the American Medical Association for the appointment of such a council; that officers have taken steps to put it clearly on the side of scientific therapeutics, and that in the arrangement of its program they endeavored to secure material representing actual investigation rather than the exploitation of unknown devices or of therapeutic fallacies.

Sunlight for Babies

By MARTHA M. ELIOT, M. D.

It is pointed out that treatment of disease with sunlight, known as heliotherapy, has been used to some extent for many centuries. Its value in treating tuberculosis has long been recognized. It has recently been shown that rickets, the commonest of all diseases of infancy, can be cured by treatment with sunlight or with light from artificial sun lamps. The development of this disease can be controlled and the deformities prevented by sunlight. Rickets develops during the first weeks of life in a very large proportion of babies. Sun baths, as well as cod liver oil, must be given at this time. Window glass does not allow the active ultra-violet rays to penetrate. In Northern latitudes the sun's rays must pass obliquely through a greater depth of atmosphere before reaching the surface of the earth. This filters out much of the ultra-violet light. Sun baths in the direct sunlight constitute the simplest method of giving the baby enough ultra-violet light. These should be begun when the baby is about three or four weeks old. The exact date when sun baths may be started will vary with the latitude and season. The first bath should be for ten or fifteen minutes only. Each day thereafter the time of exposure should be increased from three to five minutes until the baby is directly in the sun one hour in the morning and one hour in the afternoon. The head should be protected when the baby is in the sun between ten and three o'clock. A good tan color is evidence that the ultra-violet rays are being effective.

(*Child Health Bulletin*, June, 1925)

Congratulations, Dr. Kobak

At a recent meeting of the International Congress of Radiology and Physiotherapy in London, England, Disraeli Kobak, M. D., was made an honorary president of the organization. The editor of Fischer's Magazine wishes to join the many friends of Dr. Kobak in congratulating him on this well-earned compliment to his standing in the field of Physiotherapy.

A. M. A. Council on Physical Therapy is Established

Morris Fishbein, M. D., Editor of the J. A. M. A., in a paper on "Physical Therapy" printed in the Journal for Oct. 3, 1925, concludes his article with this statement:

At the last annual session of the American Medical Association, held in Atlantic City, the House of Delegates, at the request of numerous members of the profession, voted the establishment of a Council on Physical Therapy, consisting of chemists, physicists, physiologists, pathologists and clinicians, who are to evaluate the actual worth of physiotherapeutic apparatus and methods, and to keep the medical public informed by regular statements of the actual truth or fallacy of such claims. At the meeting of the Board of Trustees held in Chicago early this month, a tentative list of membership for such a council was drawn up. It includes men who are leaders in the field of scientific medicine and in the specialties that have been mentioned, and representatives of the greatest universities and institutions for research in physics and physical therapy that exist in this country. Practically all of these men have volunteered to serve without a cent of compensation in order to give the medical profession unbiased and scientific statements concerning the physical therapy field. . . . And the medical profession may confidently look forward to the time when the path between the vast accumulation of discarded refuse, jumbled wires, rusted hydrotherapeutic apparatus, peculiar tables and benches, worn-out electric bulbs, and other queer therapeutic apparatus, and the path leading by simple and clean methods to honest therapy will be clear. It is significant that the American Electrotherapeutic Association chose of its own accord to ask the American Medical Association for the appointment of such a council; that officers have taken steps to put it clearly on the side of scientific therapeutics, and that in the arrangement of its program they endeavored to secure material representing actual investigation rather than the exploitation of unknown devices or of therapeutic fallacies.

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Diathermy as an Adjunct to Surgery

By LLOYD M. OTIS, M. D.
Celina, Ohio

Diathermy is a high frequency current oscillating or alternating many hundred thousand times a second. Where the two poles meet internally, warmth or heat with its effects is produced. It is thermopenetration, an internal poultice, and herein lies the success of this treatment as contrasted with our former method when the heat was applied externally with only a slight penetration.

With diathermy, the deepest portions of the anatomy can be and are thoroughly heated, while the surface is but slightly warmed.

The hyperaemia produced by diathermy has the effect of removing blood stasis and relieving pain. It increases metabolism by opening the blood vessels and lymph channels, activates phagocytes and enzymes by increasing their number and also osmotic processes. Such rapid oscillations produce a vibratory effect upon each molecule reactivating all cells.

The tissues being flushed with blood, cause an absorption of the inflammatory products and deposits while the high temperature that is generated serves to inhibit bacterial growth and promotes oxidation.

With an understanding of the physiological changes produced in the tissues by diathermy, its uses become obvious. The important things in surgery are : First, Bone, joint and muscle conditions; Second, Post-operative pneumonia; Third; Disturbance of circulation; and Fourth, Malignancy.

Inflammation of muscles and tendons caused by strains and direct violence, also traumatic synovitis and bursitis, are relieved successfully by diathermy. One not employing electric modalities in such cases secures rest and relieves muscle spasm by strapping and by casts; he likewise overlooks adhesions, or at least, some organization of the infiltrates. Diathermy relieves muscle spasm and pain effectively and quickly, perhaps the first treatment, and as well promotes absorption, instead of organiza-

tion of the infiltrate, and restoration is completed at a much earlier date.

One of the most aggravating and perplexing post operative conditions to encounter is hiccough, resisting all known remedies. It is easily relieved by diathermy. One or two treatments rarely ever will fail to arrest the diaphragmatic spasm.

After a fracture is immobilized, diathermy is valuable in keeping a good circulation and thereby promoting a more rapid repair. In the aged, it is found advantageous. Callous formation may be either increased or decreased, depending on technique.

It was during the war we were given such glowing reports in the treatment of pneumonia by diathermy; in both non-operative and post-operative cases it seemed almost a specific. Two case histories may explain much better the value and technique of same.

Case Reports

Mr. H. L., confectioner, aged 53. On April 13, he had a chill lasting about 20 minutes. In a few hours he developed a severe pain in the lower right chest, considerably aggravated by a dry cough. At noon, the following day, he was removed to the hospital. Upon examination, the lower right lobe of his lung presented increased tactile fremitus, dullness upon percussion, tubular breathing upon auscultation and coughing a bloody sputum, temperature 104, pulse 144, respiration 30, blood count 28250 leucocytes. Diagnosis: Lobar pneumonia.

Immediately a treatment with diathermy was instituted lasting 45 minutes. At 3 P. M. same day, temperature was 103, pulse 120, and a more comfortable feeling was reported. In the evening he perspired freely and rested well after midnight. At 6 A. M. the next morning his temperature 101, pulse 112, respirations 28. At 7:30 A. M. another diathermy treatment was given and at 9 A. M. temperature 99.2, pulse 122, respirations 28. In the afternoon another treatment was given lasting 1 hour, and at 6 P. M. temperature was 100, pulse 106, respirations 28. At 6 A. M. the following day his temperature had dropped to 98.2, pulse 86, respiration 22; at 6 P. M., however, his temperature was 99.2, pulse 100, respirations 28. This was

his last rise in temperature, crisis taking place on the 3rd day. Two daily treatments with diathermy were continued until he left the hospital on the 6th day. Five days after the onset he was walking about the hospital.

This case is presented, although not surgical, as an example of what can be done in severe cases. The following post-operative case of pneumonia is more to the point.

A man, aged 23, operated upon January 21, 1924, for hernia. On January 24th at 4 P. M. he had a temperature of 102.6, pulse 116, respirations 30. A physical examination disclosed the signs of a post-operative pneumonia. At 6:30 diathermy was given. The next day at four P. M. his temperature was 101.8, pulse 110, respirations 28. Diathermy treatment was given twice each day and on the 3rd day his temperature was 99, pulse 82, respirations 22. After that, his temperature, pulse and respiration remained normal.

These are only two cases, though many thousands are now on record to show the efficiency of diathermy in the treatment of pneumonia.

Disturbances of circulation where there is a deficient blood supply, a stasis, perhaps after a breast amputation or in the stump of an amputated limb, are benefited, probably corrected by diathermy. To demonstrate the vascularity produced by high frequency current, all that is necessary is for a surgeon to operate upon a part that has previously been subjected to this treatment. He will imagine he is working in a cobweb of blood vessels. It is by reason of this fact a valuable assistant in the treatment of x-ray burns.

In thrombo angitis obliterans, it is perhaps the best treatment known. The response is in general like the following case. A laboring man in middle thirties froze his fingers and toes during the winter of 1920. In 1923 the hands and fingers became painful and sensitive. In three weeks the pulse in fingers was gone, and they were turning black. Pain at this time was very severe. Diathermy began and 10 hours of relief was offered after the first treatment. Circulation returned and the ulceration gradually healed. Eight to ten hours after each treatment pain would return and continued this way until ulcers healed.

Perhaps the only use of diathermy generally known to the surgeon is the electric coagulation treatment used in malignancy. It has proved itself far superior to our other forms of cauterization because the heat is generated within the tissues themselves rather than depending upon the heat to radiate from the surface. Hence it is seen that it is very efficient in destroying deep malignant cells.

Conclusions

Surgery has found a valuable assistant in physiotherapy, First, in dealing with infections; Second, by the raising of calcium and phosphorus content of the blood and the general increase in metabolism; Third, the maintenance of a good circulation in and about a fracture or stump of an amputation, the removal of indurations and exudates in restoring joints to action. The stopping of muscular spasms, especially hiccough, the return to function of muscles and nerves that seem all but lost, the rescuing of post-operative pneumonia in a few days, and the removal of stasis in any part that threatens healing are factors that are appreciated by all of the surgical profession.

(Abstracted from *O. State Med. Jour.*, Oct., 1925)

Editor's Note

Dr. Otis gave a very interesting talk at the 4th Annual Physiotherapeutic Convention, at which he presented actual cases treated by him. While too late to connect with this issue of Fischer's Magazine, we shall endeavor to have a full report of this talk in an early issue.

After Care of Knee Joint Injuries

Philip H. Kreuscher, M. D., writing in the *Medical Herald* and Physiotherapist, discusses the treatment of knee joint injuries at some length. In conclusion, he says:

The after-care requires the use of such appliances as are necessary to hold the tissues in position. Active and passive motion must be sufficiently early to avoid excessive adhesions but not so late as to permit peri-articular fixations to form. The application of physiotherapeutic measures, especially diathermy and heliotherapy, must be utilized to the fullest extent.

Physiotherapy in Paralysis Following Anterior Poliomyelitis

By E. B. KESSLER, M. D.
St. Joseph, Mo.

The paralysis of this disease is a motor paralysis or weakening of erratic distribution, most marked in the legs. Reflexes are diminished or lost, the reaction of degeneration is present in the most severely paralyzed muscles, atrophy, retarded growth, coldness and sluggish circulation supervene in the later stages in many cases.

The treatment must necessarily be directed:

- I. To the pathology in the spinal cord.
- II. To the paralyzed muscles which are the result of this pathology.

Treatment of the Spinal Cord

1. *Diathermy*—By diathermy we can apply to the spinal cord the most efficient kind of heat, converse heat, created in the tissue itself by its own resistance. It is indicated here for its solvent effect, to open up afferent and efferent channels, increase metabolism, carry away broken down inflammatory products, to relieve the pressure on the nerve cells by breaking up focal fibroses and scar tissue, absorbing old hemorrhages and exudates, by dilating the constricted blood vessels and bringing a fresh, wholesome supply of blood to the cord, thereby relieving the anemia and assisting nature in the regeneration of nerve cells and the establishing of new connections between motor cells and muscles.

2. *Static Condenser Discharge*—If diathermy alone be used the softer parts expand more than the hard, bony spine surrounding the cord and more pressure is created with its resultant passive hyperemia, which further interferes with the already poor and sluggish circulation. To this newly created hyperemia and increased blood supply within the cord let us now apply the static condenser discharge with its more than 100,000 volts and its ability to produce powerful, rhythmic, slow contractions, and thereby squeeze out this warm, fresh blood previously brought into this area by diathermy and assist

it on its way carrying out the waste products with it. This acts as a powerful massage of the parts treated and, so far as I can conceive, cannot be accomplished in any other way.

3. *Ionizing X-ray*—Once weekly let us ionize the cord with five milliamperes-minutes of a 5-inch back-up spark x-ray through one millimeter of aluminum filter at an 8 inch target skin distance for its chemical solvent effect upon the hardened and sclerosed tissue in the cord. Probably some of you do not believe in the ionizing x-ray dosages, but having tried it, all I can say is that it works. It does what we expect it to do. So much for the treatment of the spinal cord.

Treatment of the Paralyzed Muscles

Now, let us consider briefly the paralysis, resulting from the pathology in the cord, and its treatment. Here we find many, many muscles involved, the abdominal muscles, muscles of the back, neck, face and extremities. Statistics show 72 per cent of cases paralyzed in the abdomen, 13½ per cent in the back, 11 per cent in the neck and in a series of 90 cases, 31 showed involvement of facial muscles, but by far the greater number showed paralysis of the legs and arms. It is surprising the number of cases showing disturbances of circulation accompanied by atrophy of both bone and muscles and retarded growth, the whole group being spoken of as trophic disturbances. During cold weather such limbs become cold and blue, subcutaneous areas of discolored tissue often occur which may break down and become infected, causing indolent ulcers.

To prevent such an occurrence one should test out the various muscles and sets of muscles as to reaction of regeneration, finding out which muscles are affected and to what degree, and record these for reference during treatment of these particular muscles. The question is: what shall this treatment be?

1. *Diathermy*—Surely diathermy is indicated, for what could bring the blood to these parts with disturbed circulation and atrophy of muscle, and probably bone, as does diathermy? If these tissues be well supplied and nourished with blood we can do much to prevent the atrophy, retarded growth and trophic disturbances. Diathermize all available paralyzed and

undernourished muscles, using a small amount of sedative diathermy at the start and gradually increase the dosage as required.

2. *Slow Sinusoidal Current*—For the graduated and accurate massage and exercise of these muscles, to do just that which the patient of his own volition cannot do, to keep down or prevent the atrophy of disuse, the slow sinusoidal current is unsurpassed. Start with a very small amount of current, allow several parts of rest to one of contraction, and request the patient to concentrate his mind on moving that particular muscle and attempt to re-educate that muscle. Slowly and gradually increase the current as the muscle improves in strength, but be very careful indeed that you do not fatigue any weak muscle, as this is worse than no exercise at all. When voluntary movement is obtained request moderate and gradual exercise, warning your patient against overwork.

3. *Ultra Violet Light*—The air cooled lamp should be used for general body radiation during the whole period of treatment. Remember we are dealing with the effects of an infectious disease, a continued mild sepsis, and a loss of appetite which may persist for some time. In some cases months may elapse before the general health becomes normal, the general sequelae being much the same as after one of the acute exanthemata, and these patients need the wonderful tonic and blood building properties of ultra violet light. The disturbance of circulation and retarded growth will surely respond to this therapy.

The question now naturally arises as to how soon after the acute attack of Infantile Paralysis this treatment should be started. This undoubtedly is an important question, and I believe the success of our treatment depends much upon the decision made. According to authorities on the subject, the treatment may be divided into three phases:

(a) The acute phase—from the onset of the malady to the disappearance of tenderness.

(b) The convalescent phase—beginning at the end of the acute phase (about two weeks) and continuing as long as spontaneous improvement is marked (about 2 years).

(c) The chronic phase—when the affection has become more stationary and deformities, if present, have become established.

It is in the second or convalescent phase that we are most interested for three reasons:

(a) First, because before this time we are dealing with possible hemorrhages, congestion and irritation in the cord—a still active process in which case diathermy or any active treatment is contra-indicated.

(b) Second, because it is during the convalescent phase that these patients seek medical advice and treatment, and

(c) Third, because during this time the greatest amount of good may be accomplished.

When the acute stage of the process in the cord may be assumed to be at an end, then one may make an estimate of the damage done and plan a campaign of treatment. Pathologically the products of hemorrhage are being absorbed, edema and perivascular infiltration are diminishing, and physiologically the motor area of the brain is trying to send impulses to the affected muscles only to find the path of conduction partly or wholly blocked. All nerve cells are not destroyed. Some are only injured and may recover if treated soon. Nature in this stage is working hardest to repair and restore function and we should aid her by the most natural treatment available—Physiotherapy. The outlook is better in the first year than later, but there seems to be no time limit for obtaining beneficial results from treatment. Most deformities could be prevented, for the majority of muscles are not paralyzed at this time, but are only weakened. Impulses from the brain may be sent around the destroyed centers by new paths to the muscle. This is best accomplished by muscle training, exercise and proper treatment of weakened muscles at this time.

Conclusion

The writer believes that much of the permanent paralysis of Anterior-Poliomyelitis can be prevented if proper and scientific treatment be afforded at the proper time and faithfully pursued, and that Physiotherapy offers the greatest possibilities toward that goal of any treatment known today.

Abstracted from a paper read at the X-ray, Radium and Physiotherapy meeting, Omaha, Jan. 5, 1925.

Phototherapy in Otorhinolaryngology

By ABRAHAM R. HOLLENDER, M. D., and
MAURICE H. COTTLE, M. D.

The beneficent effects of the sun's rays in nutritional diseases has long been recognized. But it was not until the work of Finsen with the carbon arc lamp, that the true bactericidal property of the blue, violet and ultra-violet rays was realized. It otorhinolaryngology, phototherapy has been able to penetrate into the closed cavities and exert its germicidal and stimulating effect on the tissues.

The ultra-violet rays are practically completely absorbed by the skin, while the violet rays penetrate more deeply. The ultra-violet rays from the mercury quartz lamp have a superficial effect, the deep penetration depending on the distance of the lamp from the skin. The local effect in either case is considered bactericidal, and the general effect is looked upon as being biologic.

In treating chronic otorrhea, the ear is first cleansed out with suction, and an anilin dye, usually a 2 per cent mercurochrome solution is instilled into the ear canal and allowed to remain for a period of ten minutes, after which the ear is mopped dry and the lamp applied, with a suitable aural applicator, for one minute. The voltage is measured and the time is gradually increased until a three minute treatment is administered at the sixth application.

Phototherapy has proven beneficial in many other conditions, particularly the calcium deficiency diseases. Hyperesthetic rhinitis has been shown to be a calcium deficiency disease, and on this basis experiments were carried out to show the results with calcium, thyroid, parathyroid and combinations of these remedies. This calcium increase has been definitely increased by means of the ultra-violet irradiations.

Phototherapy has also proved to be useful in external skin phenomena, for example furunculosis, acne, and dermatitis pustulosa. The effect of the ultra-violet ray on the skin is not due to heat. The erythema which is produced is undoubtedly

due to some photochemical reaction affecting the arterioles. Whether or not the amount of body reaction can be gauged by the degree of erythema produced is questionable. Pigment plays an important part in the skin irradiation and may be a factor in the absorption of the rays. Proceeding on this assumption, investigators have stated that favorable results derived are due in large part to the degree of pigmentation. If a local manifestation is present, ultra-violet therapy will ameliorate the symptoms by augmenting the calcium content of the blood.

Comments Please

Each Annual Physiotherapeutic Convention is bigger and better and more productive of results than its predecessor; largely because each is conducted on the basis of past experience.

We live and learn. And, especially, we learn from you men in the field, who know just what your daily problems are and how these Conventions can help in their solution.

So we invite comments and constructive criticism on the Conventions. How can we better them, from your point of view? How can they be made more useful to you? Tell us frankly, for it is our purpose to make the Conventions truly representative of the best thought in the profession.

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Heliotherapy

Generations of laymen as well as physicians have somehow assumed that part of the beneficial effects of outdoor life is attributable to sunshine. The influence of sunlight on health and disease is being unravelled gradually. An impetus to the study has been derived from the investigations of the biologic actions of light, particularly as they are related to dietary deficiencies. It is now clearly established that exposure to ultra-violet radiations will protect against the effects of the lack of antirachitic factors in the diet. Furthermore, foods may acquire antirachitic properties by being irradiated. Recent experiments on the effect of radiation on the bactericidal power of the blood indicate that the exposure of the skin of animals to a source of ultra-violet radiation gives an increased bactericidal power to the blood and serum. It has been found that irradiation for purposes of treatment must be carefully graded, since excessive exposures cause a deterioration of the blood no less striking than the improvement obtained with smaller doses.

(Abstracted from Jour. A. M. A., May 16, 1925, Page 1498)

Personally Conducted Tour of Foreign Physiotherapeutic Clinics

As announced at the Fourth Annual Physiotherapeutic Convention, a personally conducted tour of European physiotherapeutic clinics is now being arranged by the Educational Department of H. G. Fischer & Company. The party will visit clinics in London, Paris, Glasgow, Berlin, Leysen and other centers, all arrangements being made for accommodations and for clinics conducted by eminent authorities. The cost will be nominal, going down in proportion as the number increases. We are anxious to know how many physicians wish to take advantage of this tour, and to get their views as to itinerary, etc. If you are interested, please write to the Educational Department, H. G. Fischer & Company, giving your views, and we will in turn send you full details.

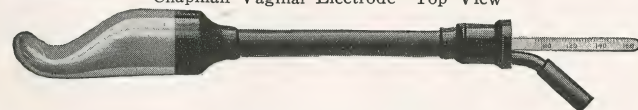
The Chapman Vaginal Electrode



Chapman Vaginal Electrode—Side View



Chapman Vaginal Electrode—Top View



Chapman Vaginal Electrode with Special Thermometer

An improved vaginal electrode which permits the use of the maximum amount of diathermic heat, properly applied to the affected parts. The instrument is introduced edgewise into the vagina and then rotated into position. When properly applied, it automatically engages the cervix within the cervical bowl and elevates and supports the uterus, while the vulva closes over the insulated vulval groove and helps to hold it in position. Cannot work out of the vagina during treatment. Because the vaginal mucosa will tolerate temperatures greatly in excess of what the skin will stand, it is possible, with this electrode, to elevate the amperage considerably above what would be possible if the non-insulated tip came in contact with the external skin. Made in two sizes, standard and small size, also supplied with or without the thermometer which permits accurate reading of internal temperature throughout the treatment. Shank or handle is of hard rubber.

Regulation size Chapman Vaginal Electrode, shank $1\frac{1}{8}$ in. diameter, cervical bowl $1\frac{3}{4}$ in. wide and $\frac{3}{8}$ in. thick. Price, complete with thermometer, \$12.00. Without thermometer, \$6.50.

Small size Chapman Vaginal Electrode, shank $\frac{1}{2}$ in. diameter, cervical bowl $1\frac{1}{8}$ in. wide and $\frac{1}{8}$ in. thick. Price, complete with thermometer, \$12.00. Without thermometer, \$6.50.

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PHYSIOTHERAPY HEADQUARTERS

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CHICAGO, ILL.

A PAGE OF FUN

A lady who had given a dinner party met her doctor in the street the following day, and stopped to speak to him.

"I am so sorry, doctor," she said, "that you were not able to come to my dinner party last night; it would have done you good to be there."

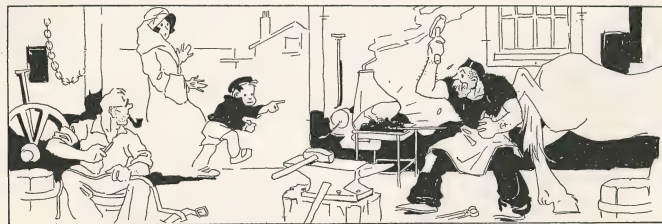
"It has already done me good," he replied tersely. "I have just prescribed for three of the guests."

—The Tatler.

□ □ □

"Step right up, ladies and gentlemen," bawled the barker through a huge megaphone, "and see the woman get sawed in two before your very eyes. All for the price of one dime, the tenth part of a daller!"

"Oh, well I'll take a chance," laughed the Crafty One to himself, "though, of course, it must be all a trick. Otherwise, they'd charge more."



Willie: "Oh, mamma, see the man building a horse!"

Mamma: "Why, Willie, he's not building a horse!"

Willie: "Of course he is! He's just nailing on the back feet!"

"I must see the doctor today. I don't like the look of my wife."

"That's an idea. I'll come with you, old man; I can't bear the sight of mine either."

□ □ □

"At last," sighed the statesman, "I am famous. The humorists are attributing their bum stories to me."

□ □ □

Your back aches because:

"Kidneys," said the herb man.

"Prostate," said the G. U. doctor.

"Flat-foot," said the shoe doctor.

"Pelvic trouble," said the gynecologist.

"Infected teeth," said the dentist.

"Mal-adjustment," said the osteopath.

"Impinged nerves," assured the chiropractor.

"It don't ache," emphasized the Christian Scientist.

—Medical Herald.

Last Call for the November Physiotherapeutic Meeting

Monday, November 9th, 1925

WM. E. HOWELL, M. D., Chicago, Ill.

"Electrocoagulation of Minor Malignancies" 10:00 to 11:00 A. M.

CARLTON L. ROWELL, M. D., Chicago, Ill.

"Diathermy in Gonorrhea" - - - 11:00 to 12:00 A. M.

CHAS. H. FREDRICKSON, M. D., Chicago, Ill.

"Hemorrhoids" - - - - - 1:30 to 2:30 P. M.

RAYMOND F. ELMER, M. D., Chicago, Ill.

"Electrocoagulation of Tonsils" - - - 2:30 to 3:30 P. M.

As those who are familiar with the work of these men will immediately recognize, this is a program of exceptional merit. All these men have built reputations for themselves in the very lines covered by their subjects. Physicians and surgeons interested in surgical diathermy and in gynecological work will find this meeting very well worth attending. Ample facilities have been provided so that every visitor is assured of a seat. There are no fees and no obligation is involved.

H. G. FISCHER & CO., Inc., Phone Armitage 0323
Physiotherapy Headquarters
2335 Wabansia Avenue, Chicago

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.

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and one block west, or

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Humboldt Park "L" to West-
ern Avenue Station, walk one
block north to Wabansia Ave-
nue and a short block east to
Claremont, or

BY SURFACE CAR—Western
Avenue to Wabansia Avenue,
and one block east to Clare-
mont.

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

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FISCHER'S MAGAZINE



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DECEMBER, 1925

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WARDS OF MAN-
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Fischer's Magazine

*Devoted to the advancement of the Science of Electro-Physio-
Therapy and to the interests of those earnest and enlightened
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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

Educational Department
H. G. FISCHER & COMPANY, INC.,
Physiotherapy Headquarters

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.

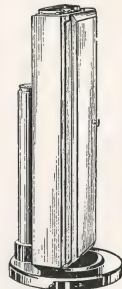
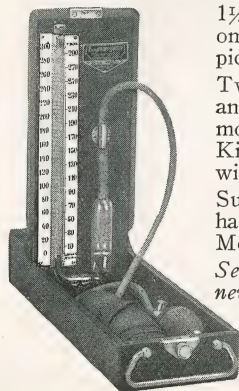
Send for a chart descriptive of the new Cabinet Model Baumanometer.

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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. 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.)

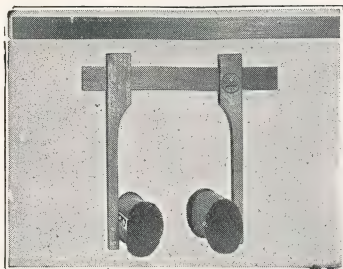
Congratulations, Dr. Walke!

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.

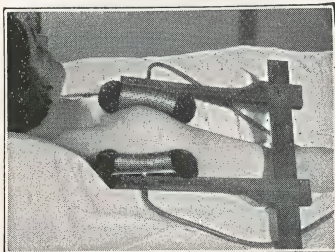
All who know Dr. Walke will join with us, we feel sure, in extending congratulations to him. Both organizations have chosen wisely in selecting him as an official, as without question time will demonstrate.

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.

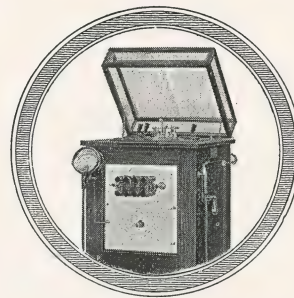
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A PAGE OF FUN

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."

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."



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

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

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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Program for Our Monthly Physiotherapeutic Meeting

Monday, February 8th, 1926

L. K. EASTMAN, M. D., Medical Director and Owner Keystone
Hospital, Chicago, Illinois.

"Physiotherapy in the Treatment of Fractures"

10:00 to 11:00 A. M.

L. M. OTIS, M. D., Medical Superintendent, Otis Hospital,
Celina, Ohio.

"Diathermy for the General Practitioner" - 11:00 to 12:00 A. M.

EMILE C. DUVAL, M. D., Chicago, Illinois.

"The Treatment of Osteomyelitis by Diathermy"

1:30 to 2:30 P. M.

L. M. OTIS, M. D., Celina, Ohio.

"The Economic Value of Physiotherapy" - 2:30 to 3:30 P. M.

These meetings are open to physicians and surgeons, without fee or obligation. Come any time during the day and stay as long as you like. These clinics are strictly informal, and are wholly under the supervision of the various physicians on the program.

For February, an unusually interesting program is offered, including talks and demonstrations by three physicians whose names are well known in physiotherapeutic circles.

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JANUARY, 1926

376

VALUE—

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THE BEST YOU HAVE
AND THE BEST WILL
COME BACK TO YOU.

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. V.

JANUARY, 1926

No. 1

Diathermy in Lobar Pneumonia

By HARRY EATON STEWART, M. D.

New Haven, Conn.

We are entering the fourth year of our clinical study of the effect of diathermy in lobar pneumonia. The beginning and a large share of the total amount of this work was done here in New York at the United States Marine Hospital on Staten Island.

Being frankly experimental, the beginning of the work was postponed until we had a case in which there was apparently no other possible chance for recovery. Such a case soon occurred in a patient whom we saw on the eleventh day of an extending lobar involvement, with every sign of impending death. The result obtained in this preliminary test case was one of the most dramatic in the author's medical experience. The patient's cyanosis, which was extreme, disappeared almost immediately after the maximum heat was reached, his expiratory grunt ceased and he returned to consciousness, expressing a feeling of relief, which lasted about four hours, during which he slept soundly. There was some improvement in his thready irregular pulse, which gain became marked and permanent following the next few treatments. His temperature fell by lysis and he made an uninterrupted recovery.

Realizing that this result might have been accidental, we were encouraged to continue with a series of ten cases. In all of these and the subsequent cases treated clinical and laboratory findings were made entirely by the regular hospital staff, and the writer's department was concerned merely with the admin-

istration of the treatments. Except for one case, practically moribund on admission, with four lobes involved by a streptococcal infection, septicemia and empyema, these cases all recovered. A second series did equally well under diathermy, after which it was decided to run a series of controls for a comparative study.

You do not have to be reminded of the caution that must be exercised in accepting any treatment as of value in this disease. Pneumonia varies widely in its mortality in different seasonal epidemics, in groups of cases in which different types of the organism predominate, according to the patient's age, alcoholic history and the conditions under which the illness occurs. We thought we had a rather unusual opportunity in this hospital for the study of a treated and control group. The cases admitted were practically all merchant seamen who in the two groups averaged about thirty-five years of age with practically the same alcoholic histories and similar living conditions aboard ship. They were treated exactly alike by the same physicians and nurses in the hospital wards, except as regards diathermy.

The general average mortality in lobar pneumonia is believed to be about 35 per cent at thirty-five years of age. This mortality would be increased somewhat in men of the type of life with whom we had to deal and by the conditions under which most of them were taken ill on ship-board. We have one series of 41 treated cases with an average mortality of 17 per cent, and 21 cases used as controls with a mortality of 42.9 per cent, a reduction of about 60 per cent in favor of the treated group.

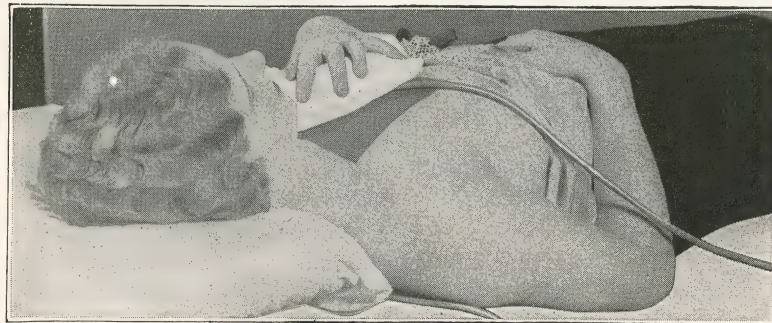
Interest aroused in our work has led to the use of diathermy in pneumonia in a rapidly growing number of cases in hospital and private practice. This work has been done under the close observation of between fifty and sixty different clinicians whose unbiased opinion has been helpful in estimating the value of the treatment. The relief of symptoms described in the treatment of our first case has been practically the rule in the entire group reported on. The fall in temperature began immediately by lysis in all but three or four of all treated cases.

There is in private practice an increasing tendency to use

diathermy only in the more severe cases, and in spite of this the mortality has not risen much above 13 per cent. More than half of the cases treated with diathermy in which death occurred were apparently hopeless at the time treatment was instituted. Many of them were complicated by four or five lobe involvement, marked pathology in the heart or kidneys, and present or recent pregnancy. Only a single case has been lost (as far as the writer is aware) in which diathermy was given before the third day of the disease.

Recent Case Reports

Of special interest are three groups of cases recently reported. One occurred in the Iowa Institution for Feeble Minded Children, Glenwood, Iowa, treated under the direction of Dr. T. B. Lacey. These children, Mongolian Idiots and low grade morons, have notoriously small resistance to serious disease. Dr. Lacey was able to obtain a mortality of 10 per cent last year by using diathermy in pneumonia, where heretofore his mortality had been very greatly in excess of that figure. The second group occurred among the miners in the employ of a leading zinc company in New Jersey, where for years the mortality from pneumonia had been exceedingly high. Exact figures are not yet available, but it can be stated that a very great reduction in the number of fatal cases, apparently due solely to



Diathermy in Pneumonia Illustration shows the large electrode applied over the chest. A similar electrode is placed under the patient's back.

the use of diathermy, has been obtained in the plant hospital of this company. The third group comprises a study of 154 cases of lobar pneumonia treated by Dr. Groesbeck F. Walsh in the Employees Hospital of the Tennessee Coal, Iron and Railroad Co., Fairfield, Ala., a report of which was read by him before the Internal Medicinal Section of the Southern Medical Association, held at New Orleans, La., November 24, 1924.

In his series the cases that were moribund, those with severe complications and those occurring among infants and children were excluded from both groups. Of his cases 122 were negroes and 132 whites. There were 31 females and 123 males. In the treated group of 95 twelve were lost (a mortality of 12.4 per cent), and in the untreated group of 59 twelve were lost (a mortality of 20.3 per cent). As was the case in our own control group, the patients were treated exactly alike as to medicinal and nursing care by the same physicians and nurses.

X-rays were obtained in practically every case. Up to the time of this study 400 cases of lobar pneumonia treated by the staff of this hospital since November, 1919, gave a mortality of about 25 per cent. Dr. Walsh feels, as does the writer, that his group is still too small to state that the mortality was lessened by the use of diathermy, but his figures add distinctly to the presumption that it was.

These cases have been treated since February, 1924, and it is expected that this season will greatly increase the figures obtainable. The symptomatic relief following treatment in all of these cases is practically identical with that described by me, and he too reports not a single untoward effect from the use of diathermy. The writer's treatment technique as described in this paper was followed out exactly.

How can the almost invariable symptomatic relief and possible reduction in mortality be explained? The symptomatic improvement is immediate, lasting in its *full* effect not over four hours, and must be explained by the simple physical presence of the intrapulmonic heat developed. On the other hand, the reduction of the mortality, if such there be, must be due to a

stimulative effect on the body's natural defense against the pneumococcus.

The analgesia which the heat produces in sensory nerve termini accounts for the cessation of the respiratory grunt and slightly increased respiratory excursions. The cyanosis, in part due to deficient aeration of the blood, and in part probably an index of the overload on the right ventricle, is nearly always diminished or completely dispelled. This is probably due to temporary improvement in the pulmonic circulation around the consolidated area. It is not probable that the solidified area itself is greatly affected. Increased quantity and ease of expectoration usually follows the treatment. There is some lowering of systolic and diastolic blood pressure after nearly every diathermy application. At first we felt that hypotension was a contraindication to the use of diathermy, but have not found it so in the light of subsequent experience.

In none of our cases did the temperature reach normal any sooner than it would have done in untreated cases. The use of diathermy does not, then, shorten the duration of the disease. It has, however, seemed to definitely shorten the period of resolution.

There are cases in which resolution is rather rapid with accompanying signs of toxin absorption. Diathermy should at once be discontinued, if such condition arises.

The rationale behind the use of diathermy is totally different from that of serum. Hence there is no contraindication to their combined use where serum is clearly indicated. The employment of diathermy, an external procedure, is followed by no unfavorable reaction, does not have to be postponed awaiting the result of laboratory reports, and is apparently efficacious in all types of lobar pneumonia. Therefore, it presents several advantages over the use of serum.

Technique

Diathermy is the application of the bipolar high frequency current of D'Arsonval, which produces a central heat between the surface electrodes. It can be given wherever there is alternating current by means of any one of several types of portable

apparatus supplied with a milliamperemeter and capable of delivering 2,000 milliamperes of current.

For electrodes we usually employ the flexible composition metal, 22 gauge, cut in convenient sizes with edges turned over and rolled flat. For use over a single lobe plates about 5 by 7 inches, applied to the chest and back, are convenient. In treating two adjacent lobes, one lung, or both bases, we use larger electrodes, which will include the involved area. When it is necessary to treat two non-adjacent lobes, plates of the size for a single lobe treatment are employed and two separate applications of the current are given. The anterior electrode may be of flexible chain material when there is any great irregularity in the contour of the chest. The preparation of the electrodes consists in warming them thoroughly and covering them with hot soap lather before applying them to the skin. The posterior electrode, clipped to the cord, is placed on a folded bath towel, the mattress depressed, and the electrode slid under the patient to its proper position without disturbing him. An additional towel or small pillow may then be crowded under it to insure good contact. The chest electrode may be gently held in place by the tips of the operator's fingers or secured with adhesive strips. Sand or shot bags and circular constrictions are to be avoided, if possible. When the patient is restless, irrational or coughing heavily, good contact must be secured in any event.

With everything in readiness, the current is turned on slowly and gradually, employing about five minutes to reach maximum of 1,400 to 2,000 milliamperes. This maximum may be maintained for twenty to thirty minutes, and then turned slowly and completely off. When patients are restless the cords must be so placed that it will be impossible for them to be pulled loose. In very severe cases treatment may be repeated every four hours. In the usual case two to three treatments in twenty-four hours are sufficient. With the onset of resolution the treatments can be rapidly cut down, both in amount and frequency. In the treatment of children the size of the chest should determine the proper electrodes to choose, and a current of not over fifty milliamperes per square inch of the electrode surface given.

The cumulative experience of the profession in the treatment of this disease has taught caution in placing faith in any one method of treatment. Innumerable methods have been tried and discarded in an attempt to lower the heavy mortality incident to lobar pneumonia.

Clinical investigation of the effect of diathermy in lobar pneumonia offers certain advantages. Among these are:

- a. It is available wherever electricity is installed.
- b. It requires no cumbersome or very expensive apparatus.
- c. The technique of its application while exacting is neither very difficult nor complicated.
- d. Not a single untoward effect has followed the giving of some 1,900 treatments reported to date. We may therefore feel assured that, properly given, it is absolutely safe.
- e. No other part of the entire treatment regime of the patient, even including the use of serum, need be postponed or contraindicated when diathermy is employed.
- f. Unlike certain other medical and surgical procedures, it has not proved its value almost wholly in the hands of one individual or institution. The writer is glad to acknowledge that a number of his co-workers have obtained a lower mortality in the treatment of their cases than he has in his own. He feels certain that what they have done may be equalled or surpassed by the Profession at large.

(From *Am. Jour. of Electro. and Radiol.*, Feb., 1925)

Electrotherapy

Weiss used successfully cataphoresis of colloidal silver for impregnation of bones from cadavers. The results were sufficiently encouraging for therapeutic experiments in tuberculosis of the bones. The first impression was very good, but he thinks that it is necessary to wait longer with the publication of clinical results.

(From *J. A. M. A.*)

White or Blue Globes for Deep Therapy

By CURRAN POPE, M. D.

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and Physical Therapist, St. Anthony's Hospital

Louisville, Ky.

Light may be divided into the visible and invisible rays. If we pass the white light of the sun or the light of the electric arc through a prism the light is split into its component rays. These component rays are known as the solar spectrum. The seven different colors of the visible rays from long to short waves are red, orange, yellow, green, blue, indigo and violet. We therefore can see the entire combination of colors, white light and its component parts when split into colors. The red and orange produce or are associated with heat, both physically, physiologically and psychologically. The latter, symbolically standing for heat and passion (both anger and sexual) and typified by many expressions in the language such as in criminology a deed done in "heat and passion"; "he saw red" (anger); "red light district," etc., etc. In the fall or autumn one of the reasons why the red leaves are so beautiful is that they give the impression of warmth and heat in the landscape before the onset of the temporary death and bleakness of nature's vegetation. Yellow and green are light producers and are often spoken of as luminous. The luminous rays we find are restful. The brilliant greens of the trees and plants, of the grass, rarely if ever irritate the eyes. The blue, indigo and violet are believed to possess some chemical properties, these properties increasing as we pass into the shorter wave lengths of the actinic and Roentgen fields. From time immemorial dark blue, indigo, and violet have been associated with a sense of quiet, repose and therapeutically are sedative. The last named has for centuries been the color of half mourning. Many decades ago General Pleasanton, an Englishman, used a "Blue Glass Treatment," which was as is often the case, patronized by many people who proclaimed the beneficent and sedative properties of the treatment. The medical profession dubbed him a quack, decried and fought the treatment, but in view of later knowledge

it is probable that it may have had both a physiological and psychological sedative effect. Both white and blue light from the so-called deep therapy lamp are visible rays. Both are neat, clean and satisfactory methods of applying *dry* heat. The chemical or actinic frequencies can be screened by glass, which effectually prevents their passing. Blue, indigo and violet colored light also screen the larger number of the frequencies below the blue. Hence we may say that the blue lamp is relatively speaking a colder light than the whole or colorless globe. Kaiser (British Medical Journal) observed the favorable action of blue light on septic ulcers and on tubercle bacillus, finding that the cultures lived when exposed to the red and yellow. He advised that preference be given to blue light therapy in preference to white light therapy in tuberculosis, as he believed that the blue light killed the tubercle bacillus and, furthermore, that the blue and violet light penetrated bones and those tissues which are not richly supplied with blood. Kaiser insists that a "Blue Screen" or globe must be tested to see that the blue glass effectively shuts out the other frequencies below the blue. *Personally*, I doubt if the ordinary commercial blue 1500 watt globe as purchased in the stores filters very many of the wave lengths below the blue, and is probably blue to the eye rather than blue therapeutically. Kaiser's conclusions were that blue light stimulates metabolism, that its action is directly proportional to the intensity and distance of the ray of light; that they penetrate vascular tissues; that deep effects can be produced and that they are anodyne when concentrated. As long ago as 30 years, Pancoast of Philadelphia in his book, "Blue and Red Light," spoke of the advantage of blue light in a number of diseases.

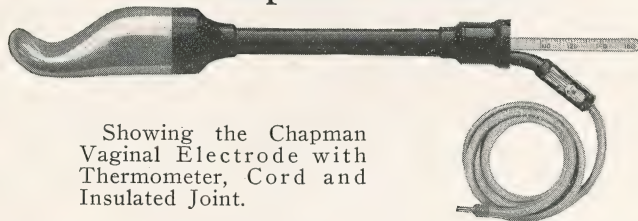
Minin (A. W.; St. Petersburg. "On the therapeutics of the blue light": Journal Physical Therapeutics, January 15th, 1902) believed the blue light from his Minin lamp, long since replaced by the deep therapy lamp, acted more or less specifically on the vasomotor nerves; that they were sedative and analgesic and ameliorated painful nerve states. He obtained results even when his lamps were far distant enough to remove the thermal action. He performed minor operations, using it as a local

anesthetic, believing also that it materially favored the healing and cicatrization of wounds. He claimed excellent results in pleurisy and noted that a granular surface became red under white light and pale anemic under blue light. He often used the white light and followed it immediately with the blue light because it enhanced the action of both. Bloody effusions ("Black eyes") were more quickly absorbed when treated three or four days afterwards by the blue light than if treated at once. The light's action was to relieve pain and effusion, and the ecchymosis is rapidly absorbed. Burbank ("Ultra-Violet Ray Anesthesia in Minor Surgery," *American Medicine*, April 25th, 1903) reports two cases operated upon by the Menin lamp. He mistakenly calls it "Ultra-Violet" when it is in reality a visible light. Menin's lamp utilized the visible chemical frequencies of the blue, indigo and violet up to the ultra-violet frequencies. Tracy (E. A.: "Skin Anesthesia produced by Actinic," *Ultra-Violet Rays from Menin's Apparatus*: Boston Medical and Surgical Journal) makes the same mistake as Burbank, but confirms the analgesic and healing action of the blue frequencies. William Benham Snow, Sr., has told me that his experience with blue light was similar to those quoted. I was among the first to use the Menin light, and found its physiological action to be that of light in general and of blue light in particular, that is, exceptionally sedative and in moderate degree an analgesic, but I cannot for one moment confirm, nor did I ever find that Menin's statement was true that blue light "Was the equal of cocaine," in my hands it was a poor substitute for local chemical (or medicinal) anesthesia. It must be borne in mind that Menin's globes were all made under his direction, tested and imported from Petrograd, in days and times when science flourished in that city and when lamps were not *all* red. Cleaves (Margaret; *Light Energy*, 1904, page 578) summarizes the action of blue light as producing first a vaso-constriction followed by dilatation, rendering the tissues anemic rather than hyperemic; that in the anemic stage analgesia is most pronounced; that it has a quieting and soothing influence upon the peripheral nerves and the nervous system in general; that it heals wounds and increases the power

to do muscular work. She calls attention to the fact that Von Jaksch (XXth Congress Fuer Innere Medizin, 1902) used blue glass chimneys in his wards. It will thus be seen that the visible blue rays act on the peripheral nerves, soothing, quieting and relieving tension. The so-called visible chemical rays are believed to be of specific value as a reliever of pain, both stimulate the circulation, relieve areas of stasis, unload especially the veins, stimulate the flow of lymph, deplete the deeper structures and promote local metabolic changes. The Royal Mausoleum at Charlottenburg, Germany, has a reputation of being a shrine for persons with shattered nerves and wherein peace, rest and comfort can be found. Of the beauties of this refuge I can personally testify, with its magnificent stained windows of blue glass. The sunlight floods the interior with a pleasing, mellow blue light. It should be noted that accompanying any physiological effect in this chapel the psychic influence must not be forgotten. It may here be noted that some physicians have used a blue light for auto-hypnotic sleep, producing a hypnotic influence by having the patient gaze at a blue lamp and which proved efficient in some cases. Niels R. Filsen, of Copenhagen, Denmark, explains the quiet and peace of the evening hours by the deep blue light emitted by heaven's canopy. In the hurly-burly, in the changing sands of light therapy, the *old* has been forgotten, and the *new* has taken its place. In its day, blue light was much esteemed by those who used it and its results were excellent, whether due to genuine physiological action as the writer believes or to hetero- or auto-suggestion as some critic might suggest. I doubt the blue glass globe of today. It is an untested, unscientific and commercial globe, if my source of information is correct. At present its blueness is largely visual and expectancy of results similar to that of the older authorities is likely to produce "Blueness" in the psychic sphere of the radiant energy operator. The difference between the two lamps of today white and blue, may be summed up as stimulating (white) and sedative (blue) or better the blue is *less* stimulating and *more* sedative than the white. We can state that both white and blue lamps possess sedative and pain relieving properties because of their *general*

physiological action. It is probable that the blue light is more sedative, more pain-relieving and soothing than the white; that the white or colorless lamp is more heating, relaxing and stimulating than the blue; that each occupies a certain restricted field and should be applied within that field as the indications demand. Each has an advantage over the other in its line of therapy, and the possessor of two globes, using them intelligently and based upon a correct clinical interpretation of the patient's needs will obtain better success than the physician who possesses only one, whether that be plain or of azure hue.

Another Improvement for The Chapman Electrode



Showing the Chapman
Vaginal Electrode with
Thermometer, Cord and
Insulated Joint.

This improved vaginal electrode has been a favorite with gynecologists ever since its introduction, over a year ago. The one drawback noted was the need for preventing the bare binding post at the outer end of the electrode from touching the patient, thus causing shocks. This has now been overcome by the addition of a cord and an insulated joint, as illustrated. Prices of the improved electrode are as follows:

Cat. No. 1909. Code VERMIN. Regulation Size Chapman Vaginal Electrode. Shank $1\frac{1}{8}$ in. diameter, cervical bowl $1\frac{3}{4}$ in. wide and $\frac{3}{8}$ in. thick. Handle of hard rubber. Price complete with thermometer, cord and insulated joint, **\$13.75.**

Cat. No. 1908. Code VERMEL. As No. 1909, without thermometer, **\$8.25.**

Cat. No. 1907. Code VERITY. Small Size Chapman Vaginal Electrode. Shank $\frac{1}{2}$ in. diameter, cervical bowl $1\frac{1}{8}$ in. wide and $\frac{1}{8}$ in. thick. Handle of hard rubber. Price, complete with thermometer, cord and insulated joint, **\$13.75.**

Cat. No. 1906. Code VERDUR. As No. 1907, without thermometer, **\$8.25.**

Physiotherapy in a State Hospital

By L. C. ELSOM, M. D.
Madison, Wis.

When I came back from the army, having been director of physiotherapy in one of the large hospitals in the east, I wanted to introduce some form of physiotherapeutic practice into the University of Wisconsin, because of the fact that we had a hospital there crowded with children with infantile paralysis, and cases of all sorts. I knew physiotherapy would help; so I induced the dean of the school to put in a little bit of apparatus. I think we got in a multistat galvanic machine, and a little faradic battery. We got a high frequency machine, too.

Later on, we added a good deal to our equipment so that in addition to those things which I just mentioned, we have three ultraviolet lights, a half dozen thermal lights, and deep therapy lights, Morse wave, and four or five high frequency machines.

I started out by myself at the hospital, and now I have four trained assistants. We did no advertising whatever, because my thought was, if physiotherapy is a good thing, I want to show the people and not talk about it. As a result, I am going to give you a report of the forms of treatment that we gave last month.

This was May, 1925. There were 148 cases referred by the university clinic. Let me say that the university clinic is largely a student affair and the first floor of the hospital is devoted to the student clinic or the department of student health, as we call it, and 148 cases were referred for the various forms of treatment. From outside there were referred ten cases and there were sixty-one cases of chronic patients in the hospital, 219 in all that we had during the month, in our department of physiotherapy.

Now, let me give you, if you please, the types of treatments that we used: radiant heat and light—628 treatments, daily average of 28; massage—482 treatments, daily average of 22; muscle training—362 treatments, daily average of 16. We mean by muscle training, muscle education on the part of the

crippled children, and those cases of infantile paralysis. Diathermy—249 treatments during the month, daily average of 11; fulguration—117 treatments, daily average of 5; auto-condensation—62 treatments daily average of 3; galvanic—57 treatments, daily average of 3; or not quite that amount. That makes a total of 2,458 treatments.

Now, let me mention to you the diseased conditions in which physiotherapy was applied. There were seventy cases of warty growths during the month, as follows: Verruca: hands, 21; foot, 40; face, 1; nose, 1; mouth, 2. Papillomatous; scalp, 4; neck, 1. We gave a treatment of fulguration in all cases, and we found that it is the most efficient form of removal of these growths.

Sprains, 21; knee, 3; shoulder, 2; ankle, 9; wrist, 1; finger, 1; back 1. These sprains were treated very generally, first of all, by radiant heat and light, by diathermy, by massage.

Torticollis, 4; treated very largely by the same modalities. Tenosynovitis, 3; they have a number of cases of tenosynovitis because the students are very active in exercises, such as skiing and snowshoeing.

Acne, 25; treated by the ultraviolet rays and the high frequency current, the vacuum and non-vacuum tube; tinea, 2; various indications of tinea cruris, in which the patient had gone for a long time without any relief and had used all sorts of mercurial ointments and lotions, and so forth. They had, I think, two blistering doses of the ultraviolet, and then further treatment of the ultraviolet, and were completely cured.

Alopecia areata, 4, treated by the ultraviolet with radiant heat and light. With some of these cases we get good results. I think we should give no rosy prognosis in these cases of alopecia.

Shingles, herpes zoster, 2 cases; one responded almost instantly to the ultraviolet. The other one improved considerably, and is getting well very rapidly. The first case is very interesting. This poor fellow had eruptions, typical eruptions, along the course of the nerve which is affected in herpes zoster, and I gave him a rather intensified radiation with the ultra-

violet, about a second degree erythema dose. He was suffering greatly with pain. He told me he couldn't sleep at night. In the morning about two o'clock, he would wake up, suffering with pain. After the first treatment, the pains disappeared. The eruption subsided. After that I gave him general body radiation, and he has quite recovered from his disorder.

Psoriasis is one of those freaky things. You don't know whether you are going to do any good. Sometimes you think you are going to make it disappear, and after awhile it comes again. For psoriasis, I think the ultraviolet is the best method; I am quite sure of that. I have used both methods of technic. I have used the methods of blistering doses, and I have used the method also of general body radiation. I am inclined to believe that the general body radiation possibly serves the best purpose.

Fractures, 14; radiant heat and light, diathermy massage, and, in some cases, the ultraviolet.

Indolent ulcers, 2; these were treated with radiant heat and light, and ultraviolet afterwards, and they disappeared very satisfactorily.

Bell's palsy, 3. In Bell's palsy we use the thermal light. First, radiant heat and light on the face; then we follow that by the diathermy, which is applied by using two hand electrodes. I have the patient simply hold them on the side of the face, over the affected nerves. In this way we get a very satisfactory heating current. It seems very beneficial. In most of the cases of Bell's palsy, besides the heat, besides the general massage, I nearly always give a very slight galvanic stimulation—only for a few minutes—and in most cases that form of treatment has been attended with great success. It has cut the convalescence down one-half, and possibly more.

Infantile paralysis, 6. These cases were treated with radiant heat and light, diathermy and massage.

Tuberculous lesions: Surgical tuberculosis, 3; ultraviolet and radiant heat applied. Osteomyelitis, 5; diathermy and radiant heat. Bursitis of the knee, 5; diathermy, radiant heat and massage. Contusions of the knee, 4; diathermy, radiant heat

and massage. Ankylosis of the jaw, 1. This was caused by the infection of the extraction of a tooth. The patient was hardly able to open the mouth at all. By the application of diathermy, the infection which was present had been destroyed; in addition the tissues were warmed up, thus allowing freer motion. Peripheral nerve lesions, 5; these were of various sorts; galvanic and diathermy application.

Neuritis of the shoulder and arm, 12; diathermy, radiant heat and light. Arthritis, 22; radiant heat, ultraviolet, diathermy. Infection of the hand, 5; foot, 3. Rickets, 23; treated exclusively by the ultraviolet light; and miscellaneous cases, 14. That made a total of 219 cases.

I would like to say something about rickets. We have been making a rather exhaustive study in the University of Wisconsin in regard to rickets produced in animals, by feeding them food deficient in certain vitamins—notably rats. We found rickets in rats, due to the fact that they were given insufficient rations, invariably could be cured by the ultraviolet light without any change in the food supply. That seemed rather interesting. These changes were noted by the clinical investigation and by the x-ray. It showed the apices of the bones well healed. The children that we have had in our clinic, being treated for rickets, have improved very markedly.

This has been found by actual blood test. We have found that the blood calcium has had a remarkable increase, and every one, without exception, has improved to a very great extent.

I can give you some very encouraging reports in arthritis, and some reports that are not very good. In some cases of arthritis we seemed to have had very wonderful results; that is, the pain has been relieved; the clinical symptoms have seemed to pass away, but, in regard to arthritis, we must consider, of course, there is some specific focus of infection. The focus of infection must be removed before we can hope to produce any lasting results. Taking it for granted that we have removed the focus of infection, I think diathermy presents one of the best forms of treatment, because of the fact it has a tendency to loosen up the fibrous adhesions and the calcareous deposits that may have occurred around the joints.

I don't know of anything that offers us that hope so thoroughly as diathermy does. In arthritis we have a very complicated condition of affairs. Sometimes we can do good, and sometimes we can't. Sometimes it is the only thing that apparently gives any relief.

Fulguration

Following an excellent paper on Sarcoma of the Prostate, by Herman C. Bumpus, Jr., at the meeting of the American Urologic Association at St. Louis last May, Dr. B. C. Corbus of Chicago spoke as follows:

"I would like to clear up, if I can, the nomenclature that is being used in regard to the treatment of bladder tumors, especially the word "fulguration." The word "diathermy" means dia—through, and therm—heat. We look upon the procedure as a method of using heat to destroy a tumor mass. Surgical diathermy is divided into two classes—desiccation and thermo-electric coagulation. For desiccation, which was devised and brought out by Dr. Clark of Philadelphia, we use a single pole current. We desiccate all lesions that come under the head of benign tumors, such as warts, angiomas, lymph-angiomas and chancroids. Under surgical diathermy we have the thermo-electric coagulation. This can be done with two different instruments, i. e., with a needle or with a flat disk electrode. On the face and where you want cosmetic effect use the needle; in deep thermo coagulation we use the flat disk. The word "fulguration" is an old name and urologists have come to realize that in using fulguration we defeat what we wish to do. In using the needle electrode trans-urethrally or in the open operation, we place the point on the base of the tumor and coagulate the mass until it is white. Do not rain sparks upon it. If you do, you defeat your purpose. The tumor disappears, but it comes back again because you have not destroyed the stalk. Heat will not penetrate a carbonized barrier."

Galvanism in Goitre

By J. U. GIESY, M. D.

Salt Lake City, Utah

Since the time when I had the pleasure of reading a paper on galvanism, in Chicago, in which I took opportunity to mention the fact that this modality was of great service in goitre, I have been deluged with inquiries from all parts of the United States as to technic.

With a view to answering this question in a printed form and submitting it to the profession wherever interested in the use of galvanism in an attack upon this condition, I am therefore inspired to set down briefly the method which I use at present.

First I do not wish to be understood to claim that the galvanic treatment is applicable to all types of goitre. As a matter of fact in my experience it is not. But in the simple hyperplasias—the goitres of adolescence and those of a similar type developing at more advanced age; in the simple adenomas, in some of the milder types of cystic goitre; in the secondary goitres, by which I mean those resulting from nature's own attempt by thyroid overgrowth to compensate metabolic needs in chronic infections of teeth, tonsils or other chronic infectious conditions, it is of a great value indeed.

Quite naturally in the last mentioned type, the focus of infection should be removed, and then the galvanic treatment instituted as a means of producing thyroid regression, and bringing about as nearly a restoration to normal as we may attain.

The technic is simple. It is a combination of the well established effects of the tissue-shrinking effects of the positive pole plus the ionizing effects of the negative pole on halogens. Of the latter iodine is of course, in the view of recent work on thyroid conditions, the one of choice. Personally, I use a suspension of a five per cent solution in oil. An aqueous solution of two per cent or two per cent potassium iodide may be

used. The rationale of course is that by the introduction of iodine into the system, first as an ionized intra cellular element which is later diffused throughout the body, the burden of crippled function on the thyroid is removed and the gland given an opportunity to rest and recover tone, especially when the circulatory balance is being restored through the effects of the positive pole upon the gland itself.

This being understood, one uses the negative pole moistened and covered with the oil suspension, or moistened with the aqueous solutions as preferred, as an indifferent pole, applied to any convenient point of the body. I generally place it on the chest. The positive pole moistened with water, normal salt solution or as some have suggested, a two per cent aqueous solution of thuja, is applied directly over the thyroid itself. And in order not to be vague, let me explain that the use of the term "indifferent" to the negative here means merely that it is not the pole applied to the affected organ. In reality the negative is active in that it ionizes iodine, and if thuja is used the positive is active in that it ionizes that substance. But in the sense that the positive covers the zone of attack the positive is active in this work.

The pads now being in place, and the patient comfortably placed on a table or chair, as preferred, the current is turned on gradually and easily, to from five to ten milliamperes and allowed to operate from fifteen to twenty minutes, according to whether one is treating both lobes or only one. In a double lobe treatment I generally give ten minutes over each lobe. Treatments are repeated on alternating days, approximately three times a week to begin with and later at three or four days intervals as the size of the thyroid begins to decrease. Treatment will run from six weeks to longer depending on the size and reaction of the mass. But—the results are surprising both locally and upon the general condition of the patient. I feel sure anyone who uses this method carefully will be surprised, and equally sure that his patients will be delighted and therefore satisfied.

The Principles of Diathermy with Report of Cases

By FRANK H. WALKE, M. D.

Shreveport, La.

(Abstracted from *Surg. Jour.* July, 1925)

Diathermy is the term given to the method by which an elevation of temperature is produced in the tissues of the body without destructive effect. This is a form of thermopenetration which utilizes the electrical energy of the cells for heat production by setting up violent agitations of the electrons of the cells of which the tissue is composed, which agitation results in the production of heat.

The physiology of diathermy may be described for all practical purposes as an active congestion. When this current is applied to the body, beneath each electrode the parts become sensibly warmed, and upon inspection appear hyperemic, feel hot to the touch and are covered with a profuse perspiration, thus producing some of the cardinal symptoms of inflammation minus the pain.

By the use of diathermy we apply an internal poultice, and by the proper selection of electrodes heat can be concentrated at any part of the body, whether it be in the chest, abdomen, joint, as preferred. Besides producing heat, diathermy relieves painful autonomic nerves, dilates the capillaries and viens, thus promoting arterial flow, increases oxidation, elevates body temperature, aids absorption and drainage of inflammatory products, raises opsonic index and creates a more positive chemotaxis. It increases metabolism, stimulates glandular secretion, and exerts marked analgesic properties, relieving all kinds of pain.

Among the diseases amenable to treatment by diathermy are traumatic conditions of the muscles, bones and joints; acute and chronic gonorrhea, prostatitis; neuralgia, neuritis, lumbago, sciatica; pneumonia, pleurisy and bronchitis; osteomyelitis and joint conditions; dysmenorrhea, amenorrhea and many other gynecologic conditions. And with the auto-condensation cur-

rent or systemic diathermy, the general diseases such as multiple neuritis, arteriosclerosis, hypo- and hypertension, diabetes, albuminuria, angina pectoris, and the nervous phenomena of menopause are definitely benefited by its use. Again with surgical diathermy or electrocoagulation, cancers, tumors, warts, moles, tonsils and hemorrhoids are successfully treated. The contraindications are very few and the most important is not to use it in the presence of active hemorrhage. A recent hemorrhage from a tuberculous lung, a gastric ulcer or in pregnancy are conditions in which diathermy should not be used.

In conclusion, I wish to say that in diathermy the medical profession has the most powerful agent for relieving pain ever discovered. Its field of usefulness is unlimited, its scope is extremely broad, and its results are little short of remarkable. I predict that diathermy will solve many medical problems which have heretofore been stumbling blocks to our ancient and honorable profession.

Case Reports

Case 1. R. F. H., aged 20, came to my office on crutches, complaining of a sprained ankle, which he had received two days prior in a baseball game. His ankle was swollen three times its normal size, greatly discolored and was paining him severely. He had not slept for two nights, and had used an icebag, a hot waterbag and several kinds of hot liniments, besides taking about 120 grains of aspirin, without relief.

I gave him a 30-minute treatment by diathermy, using a mesh electrode around the foot and another just below the knee. When the treatment was over he stated that he felt much better and that the acute pain had left. He returned the following day and stated that he had not suffered any pain and that the heat of the previous day's treatment remained in his leg until he retired that night. He reported a good night's rest. Another treatment of 30 minutes was given, after which he was able to put his foot on the floor and bear some weight on his leg without pain, but I cautioned him not to walk on it. The third day he came back to the office, using a cane, instead of crutches. Five treatments were given in all and

he was able to discard his cane and went back to work. The ecchymosis remained but the pain and swelling were gone.

Case 2. J. D., 26 years, a prizefighter, had been severely punished the night before by a hard-hitting opponent. He complained of great pain over the left kidney region where he had been hammered unmercifully in his fight. It was so painful that he was unable to get any ease after using liniments, ice and hot water bags. He had taken several doses of aspirin and two large doses of paregoric. The pain was so severe that he was unable to straighten himself up. I gave him 20 minutes of diathermy, using a large block tin electrode over the kidney region, and one in front. After about 5 minutes he said, "Doctor, that surely feels good." After 20 minutes' treatment he was able to straighten up and walk without pain. He came back the following day and the same length treatment was given. He said he felt fine. I did not see him for some two weeks, when I met him in the street. I inquired as to why he did not come back for further treatment. He replied that the two treatments cured him so that he did not think it necessary.

Case 3. C. W., age 23, a college student, called me up to see him, stating that had an attack of pleurisy. He knew it was pleurisy for the reason that he had suffered with a severe attack some two years previous and was laid up some several months. Physical examination did reveal a pleural condition and I told him that he would probably be sick for several weeks this time. I strapped his side with adhesive, prescribed codein with salicylates, and let it go at that. The next day he 'phoned me that he was no better, and the following day I was again called to see him. He was suffering severely and was much discouraged over his fate. As he realized that he was in for a long spell. He asked very pertinently if there was anything that could be done for this condition which would get him well faster. It then dawned on me to try diathermy, as it had been recommended in such cases, and I suggested that we try it, but there was one disadvantage, and that was that he had to come to the office. He said he would try anything or go anywhere to get rid of his pain.

When I got to the office he was there. I told him that I would not guarantee anything, as I had never treated a case before, but that it was highly praised by others. I gave him a treatment by applying a large electrode of block tin to the back and front of the chest, using a current of mild density, gradually increasing to the point of tolerance. I left him to attend to another patient in another room, and returning after 10 minutes, when I was greeted by the words: "Gee, Doc, this is heaven! I can take a long breath and it does not hurt me." I was very much pleased myself to know that he was getting some relief. After 20 minutes of treatment he did not want to leave, as he felt so much better. He said "What am I to do if the pain returns?" I said jestingly, "Tough it out." He said if the pain came back he was going to call me for another treatment if it was the middle of the night. I did not hear from him, however, but he was the first patient in the office the next morning. He reported a very comfortable night but was anxious for another treatment. I gave him five treatments in all until all pain had ceased, but he insisted on taking ten treatments. He has never had a return of the pain and this case was treated May, 1923.

Case 4. D. R., aged 52, called me on the 'phone, asking if I could do anything for a case of sciatica. He had been told of my benefiting another patient with the same malady and was anxious to know if I could help him. I told him I would not guarantee a cure, but that he might take a few treatments and see for himself. He had had several attacks of this disease and had gone to Hot Springs, Ark., for the baths on several occasions. I placed him on the table, using a block tin electrode over the sciatic notch and one over the left side of lower abdomen, and gave him a 30-minute treatment, using a mild current. He felt some better and was able to put on his clothes without assistance, but his pain was still present. He did not show any marked improvement until after the fourth treatment, but from this one he steadily improved until fifteen treatments were administered, when he was all right. (I might say in all fairness that he was taking the salicylates and on the proper diet during this period, but he thinks the treatments greatly

benefited him and said that if he should have a return of the condition he would immediately return to me.)

Case 5. Mrs. J. S., aged 41 years, mother of two children, had suffered severely for some two years with a painful dysmenorrhea. During this time it was necessary for me to give her from one to three hypodermics of morphin during each attack. Her condition was distressing and as there was no apparent cause for her sufferings, I had advised that she consult a radiologist, with the idea of taking some deep x-ray treatments for bringing on an artificial menopause. In the meanwhile I had purchased my high frequency machine and I suggested that she try it. I told her to come down to the office two weeks before her next menstrual period, which she did. I gave her ten treatments, when she 'phoned me that her menses had come on during the night without any pain, and that she was flowing freely. I told her to call me if she had any pain, but she did not. I told her to take treatment again two weeks before her next period, which she did. Her period came on normally and without pain, and I suggested that a third series of treatments be given, and this was done. Five months have elapsed since the last treatment, making eight months in all since she has had any pain. Naturally she is a booster for diathermy.

Case 6. C. S., aged 20, came to the office suffering with wryneck. He assumed the usual attitude, every movement giving pain. I gave him 40 minutes of diathermy, followed by vibration, and he got immediate relief. I told him to come back the next day for treatment, but he did not. I met him some time afterwards and asked why he did not return and he stated that he did not think it any use, for the first one cured him.

Case 7. E. P. C., a married man, aged 40 years, came to the office suffering with an acute epididymitis, of some five days' standing. His testicle was greatly swollen and very painful. I had read that diathermy was indicated in such cases and proceeded to try it. I used a large block tin electrode over his back and a mesh one over the testicles. I gave a mild current for 20 minutes and all the pain was gone. The testicles were supported by a well-fitting suspensory, and he did not

have to go to bed. He took eight treatments in all, when the pain and swelling had all gone.

Case 8. Mrs. L. D., aged 56, was referred to me by one of our prominent nose and throat specialists. This lady complained of a trifacial neuralgia for six years. She had had several operations, without relief, and was taking from 4 to 6 grains of codein and from 30 to 120 grains of aspirin each 24 hours. She had come to the conclusion that nothing could be done for her except a Gasserian ganglion operation. She was referred to me for diathermy. I gave her through-and-through, current daily, the first five treatments aggravating the condition, but it did stop her eye from watering. About the tenth treatment she reported that she had not taken any medicine whatsoever and had slept comfortably for the first time in six years. I treated her for eleven weeks and all symptoms and pains disappeared. I had a letter from her a few days ago, saying that she had had no return of her trouble.

Case 9. R. H. had his hand cut in an electric fan. The primary wound healed promptly but he had considerable pain in the bone of the thumb and first finger. This went on for about six weeks and it troubled him so that he could hardly use his hand to sign his name. He was referred to me for electrical treatment and I gave him five treatments by diathermy, using the indirect method. All symptoms subsided and has never given him trouble since.

Case 10. Mrs. S., aged 47, complained of a pain in her right hip for about seven months. She had been treated along the usual lines without any result. She had even had an abdominal operation for the relief of this condition but it did no good. She was referred for diathermic treatments and I treated her for six weeks, with a combined method of diathermy and surging sinusoidal, which gave her absolute relief. She is able to walk any distance, do her own housework and even play golf—something she had not done for nearly one year.

The Importance of Knowing All Physical Measures

Physical therapy is at last coming into its own in the United States. Simon Baruch had to fight his way for the recognition and proper use of hydrotherapy, Rollier's and Finsen's fame blazed the trail for the extended application of phototherapy and heliotherapy, while a group of enthusiastic workers, like Massey, Snow, Titus and de Kraft were the outstanding figures in the tedious task of working out the physics, physiological action and indications and technic for the most important of physical therapeutic measures, electrical energy. The impetus of extended application during the war time period and the creation of foolproof highly efficient apparatus naturally helped considerably to "popularize" measures that were ignored or scoffed at a few years ago, but these same forces create a tendency now to lay too much or almost exclusive emphasis on some of the newer measures, like diathermy and ultraviolet, forgetting the use of time proven measures, the beneficent action of which cannot be duplicated by any other known measure. Perhaps it is the natural tendency of progress in medicine that every new measure should be first hailed as a panacea for almost every ailment and after a period of overuse be relegated either to the scrapheap or its otherwise proper place. Hydrotherapy, massage the use of passive exercise (Zander) apparatus has gone through these stages, and so have the older electrical modalities, galvanism, faradism, the static current and radiant light and heat. It seems that it might prevent undue disappointment and serve better the rational development of electrotherapy, if at this stage anyone contemplating its use would get his information about the definite indications and technic of the so-called older modalities along with his learning about the newer modalities. How ridiculous does it sound to the man doing all around physical therapeutics to have some enthusiastic colleague step up,—as happens almost daily—and declare "I have heard so much of diathermy and I want to use it extensively from now on. I never used any electricity before. Can you teach me all about diathermy, if I come to you

for a few days?" "How about the other modalities?" "No, I am not interested in anything else." What if an osteopath should suddenly turn to the practice of medicine and, walking up to an internist, declare that he wants to learn all about digitalis, this being the only drug which he intends to use? The enumeration of the merits of the older modalities at this time might encourage some old practitioners to make use of the old apparatus standing around idly in their offices.

(Editorial in Am. Jour. of Electro. and Radiol.)

Treatment of Erysipelas by Ultraviolet Rays

K. Prerovsky. Bratislavske Lekarske Listy, March, 1925. vol. 4, p. 231. The author summarizes his experience in thirty-five cases. Good results can be obtained only from doses sufficient to provoke a prompt and satisfactory hyperemia of the area affected by erysipelas, as well as of adjacent sound skin. The hyperemia dose varies according to individual skin sensitiveness and the intensity of the rays. By the author's technique the first dose averages five to ten minutes, the second ten to fifteen, at a distance of sixty to seventy centimetres from the burner of a Hanau lamp, without filter but with adjacent parts, as well as eyes, protected by a covering or linen. Sitzings are given daily. Cases treated early show a more favorable reaction than advanced ones, sometimes healing completely after one sitting. More frequently the clinical signs disappear the second or third day, lasting exceptionally to the fifth. Advanced, erratic, or complicated cases as a rule require protracted administration, four to seven days.

Under this treatment all complications are easily avoided. The healing effect is ascribed by the author to active hyperemia in the inflamed area and neighboring sound tissues, which attracts defense substances to the region suffering from the infectious agent. The ultraviolet ray does not seem to have here a direct bactericidal action, as it does in vitro, and it has no influence on the formation of antibodies or on the activity of phagocytes.—C. C. V.

Light Therapy

By C. M. WESTERMAN, M. D.
St. Louis, Mo.

Treatment of Dysmenorrhea

I happen to have an office in a large building, there are perhaps some 3,000 or 4,000 tenants in the building. Many stenographers come down to my office every month suffering from dysmenorrhea. They come down to their work in the morning not feeling well. They are not down two hours until they are cramped up double. They come down to the office and the nurse takes them and puts the deep therapy lamp on them, on the bare skin. They stay there for any time from half an hour up and they go back to their work absolutely relieved of dysmenorrhea. I don't mean cured, I say relieved.

When a woman comes into your office suffering from dysmenorrhea, she wants that pain stopped. You put that light on her. After you relieve her you can go on about your corrective treatment, because you have made a friend out of her, you have inspired her confidence by the fact that you have done something without giving medicine, that gave her almost instantaneous relief. That is a big thing.

In Psoriasis

Psoriasis is the most startling skin disease that I know so far as the recoveries are concerned. A boy came to my office recently; his entire back from his shoulders to below his waist line was one mass; the lesions had all coalesced on his chest and side. I don't believe I could have placed a silver dollar without touching a lesion of psoriasis. He was about the most terrible looking object I ever saw. It happened to be Saturday night. I gave him three minutes front and back and a minute on each side with that light.

He came in Monday night and I was standing across the room from where he was undressing. When he took off his shirt I couldn't believe it was the same boy. His skin was absolutely clean from that distance. When I got up close to him I could still see the lesions. I gave him two more treatments, and that

boy's skin was as clean as my own. It was one of the most startling results I have ever seen.

In Dandruff

A great many people suffer from dandruff. Since the women have started bobbing their hair they will find more and more dandruff in their hair. Two applications of ultra-violet will cure any case of dandruff that I have ever seen. That is a broad statement but I have never seen a case where two applications of the ultra-violet ray would not cure it. I sit them under the light and let them massage their hair, in other words, run their fingers through their hair all the time. Give them three or four minutes at about twenty inches distance the first application, five minutes the second and I don't think they will see any more dandruff. If they do, let them come down the third time.

A Book Review From India

Lectures, Clinics and Discussions on Electro-Physiotherapy.

"Held at Logan Square Masonic Temple, Chicago, Illinois, October 20 to 24, 1924. Under the auspices of H. G. Fischer & Company, Inc., Chicago.

"Of late Electro-Physiotherapy is forging ahead, steadily. Many medical men are interested in this new field of Medical Science. X-rays have diagnosed what the stethoscope could not. Ultraviolet rays, x-rays and diathermy have penetrated those parts which the surgeon's knife could not and they have cured ailments which could not be cured by ointments and balms. This new therapy is unique in not being very troublesome to the patient as well as to the medical attendant. The information about this subject given in this book are eagerly sought for by many a medical man. The clinics and case reports in this volume showing the development of minutae in technic, given by men who have specialized in various branches of medical and surgical electro-physiotherapy are really very interesting. Without doubt the material published in this book is a valuable addition to the literature of electro-physiotherapy."

(From the Antiseptic, Madras, India.)

Physiotherapy for Football Players

When the Haskell Indian football team arrived in Chicago, prepared to battle Loyola University in the end-of-the-season game, three of the star players of the Indian aggregation were pretty badly damaged, after a season of hard playing. Levi, Smith and McLain were in such shape, indeed, that the Haskell coach was gravely disturbed.

Having some knowledge of the uses of Physiotherapy, he got in touch with the Fischer Company, and diathermy treatments, together with quartz light irradiation, were prescribed and given to the three players. The relief they experienced was marked, and it is worthy of note that each of them went all the way through a grueling game after the treatments.

Effect of Ultra Violet Light on Intestinal Tuberculosis

In a series of eighty-one cases of intestinal tuberculosis complicating pulmonary tuberculosis reviewed by Erickson, 85.2 per cent had a favorable result following the use of ultra-violet light, as judged by entire relief or definite improvement in symptoms, and 14.8 per cent had no result or an unfavorable one. Of these cases, 24.7 per cent had entire relief of symptoms, 47 per cent were very much improved, and 13.5 per cent had definite though less improvement. This symptomatic cure or improvement has persisted in 85 per cent of the sixty-nine cases for four months, in 50 per cent for a year or so, and in 12 per cent for from three to four years. Pain, nausea and vomiting seem to be most effectively relieved, diarrhea is more persistent, and general digestive disturbances are still more persistent. It thus seems that ultraviolet light ray treatment is of definite value for the relief of symptoms in intestinal tuberculosis.

(From J. A. M. A.)

Fischer
Type "GP"
Portable
Outfit



Cost
Complete,
\$265.00

Speaking of Diathermy in Pneumonia, Harry Eaton Stewart, M. D., Says:

"This symptomatic relief is without question sufficient to justify the use of diathermy as one phase of the routine treatment of lobar pneumonia. We have sufficient data to indicate that the treatment also has a favorable effect upon the mortality figures and it is believed that one agent of great value in the treatment of pneumonia has been found.

"Apparatus which is both portable and inexpensive may be used wherever there is electricity. Nearly every physician who has used this technique, as well as the author in his private practice, has obtained mortality figures far below the usual. This fact should indicate that this method is not one dependent on any unusual degree of personal skill or experience, but one generally available to the profession at large."—Stewart, "Physiotherapy," pp. 265, 266.

For Reprints of Articles on Pneumonia, and full information as to Diathermy Treatment, write

H. G. Fischer & Company, Inc.
Physiotherapy Headquarters

2333 Wabansia Avenue

Chicago, Illinois

A PAGE OF FUN

He (ardently): "Have you never met a man whose touch seemed to thrill every fibre of your being?"

She: "Oh, yes, once—a dentist."

□ □ □

On safe ground. New Hampshire paper — "Friday, generally fair, probably followed by Saturday."

□ □ □

Abie—"Papa, what's science?"

Papa—"Don't be dumb like, Abie, it's them things like what says, 'Keep off the grass.'"

□ □ □

Diner—"Waiter, I can't find a single clam in this chowder."

Waiter—"That's nothing! You might just as well try to locate a set of wicker furniture in our cottage pudding."

□ □ □

Husband: "Telling lies is not one of my failings."

Wife: "No, dear, it's one of your few successes."

Student (to pretty co-ed): "So you are from Long Island?"

Co-Ed: "Yes, indeed—a Great Necker."

□ □ □

Boss—"Well, did you read the letter I sent you?"

Office Boy—"Yes, sir; I read it inside and outside. On the inside it said, 'You are fired,' and on the outside it said, 'Return in five days,' so here I am."

□ □ □

A young woman, having decided that it was just at present the fashionable thing to know all about business and town industries, was being shown through a garter factory.

"Goodness!" she exclaimed, "ninety thousand pairs in one week! I don't see where they all go?"

"Neither do I," replied the young man who was guiding her, coloring slightly.



Janitor (Tipping pail of water into cash register): "Ach! Dot's goin' to run into a lot of money!"

Last Call for the January Physiotherapeutic Meeting

Monday, January 11, 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.

Here is a program of exceptional interest to the physician who employs the physiotherapeutic modalities. Dr. Cottle's intensive study of Eye and Ear work has given him a wealth of material for this talk. Dr. Kolischer, always a popular speaker at any clinic, here offers a new subject. Doctors Hammon and Helwig have a proved tonsil technic that has been successfully employed in hundreds of cases. Ample lecture hall and clinic facilities have been provided so that every visitor may 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

Program for Our Monthly Physiotherapeutic Lecture Clinic

Monday, March 8th, 1926

HERMAN J. NEUBAUER, M. D., Hinckley, Illinois.

"Why the Country Doctor Should Use Diathermy"

10:00 to 11:00 A. M.

DRS. HELWIG AND HAMMON, Vincennes, Ind.

"Tonsil Clinic—A Further Demonstration of Technic"

11:00 to 12:00 A. M.

JAMES L. SMITH, M. D., Chicago, Illinois.

"Diathermy Research in Some of the Larger Medical Schools"

1:30 to 2:30 P. M.

HERMAN J. NEUBAUER, M. D., Hinckley, Illinois.

"Inter-relationship of Quartz Light and Diathermy"

2:30 to 3:30 P. M.

Physicians and surgeons are cordially invited to attend these lecture clinics, which are open to medical men without fee or obligation. The meetings are strictly informal, and are wholly under the supervision of the various physicians on each program. Following each lecture or clinic, opportunity is afforded for open discussion of any of the subjects covered.

Doctors Helwig and Hammon are returning for a second demonstration of their highly interesting and successful tonsil technic, in response to numerous requests. Herman J. Neubauer will speak out of the wealth of his experience in the field, and Dr. Smith will report on his recent investigation of conditions in medical schools.

*The Fischer Plant is easily reached by elevated, surface lines
or motor car.*

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FISCHER'S MAGAZINE



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FEBRUARY, 1926

377

**THE FUNDAMENTAL
PRINCIPLE OF EVERY
WORTHY ENTERPRISE
IS FAITH.**

**WASHINGTON HAD
FAITH AT VALLEY
FORGE; LINCOLN HAD
FAITH AT GETTYSBURG;
ROOSEVELT HAD FAITH
IN THE AMERICAN
PEOPLE.**

**FAITH IS THE FOUNDA-
TION OF ALL BUSINESS,
THE KEYNOTE OF ALL
RELIGION.**

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. V.

FEBRUARY, 1926

No. 2

The "Princess Sunshine"

In the death of England's Queen Mother, Alexandra, there came to its close a life that bridged a gap of two centuries—centuries so distinct that they might have contained two separate civilizations in their social and scientific achievements.

A world of events were "traced on the scroll of her life" between the triumphant entry into a London of 2,000,000 inhabitants and her processional departure from a London of 7,000,000 people.

And so, too, are the epochs of medicine which she had known marked with advance—from the days of bleeding when each physician carried leeches to these modern days of physiotherapy.

To Queen Alexandra physiotherapy owes a debt.

"Any work for the alleviation of pain and suffering was sure of her sympathy and charity," writes the London Sphere in reviewing the late queen mother's life. "It was to her initiative that the Finsen Light Treatment for the painful disease of lupus was instituted in the London hospital."

So keen was the interest of the queen mother in the pioneer work of her compatriot Finsen in actinotherapy, that she endowed the ultra-violet clinic of the London hospital, sending members of its medical staff to her native Copenhagen to study Dr. Finsen's technique.

Thus, one day in the year became associated with her name in England—Alexandra Day—when wild roses were sold in every city and hamlet for the benefit of her hospitals.

And so, too, it was that in the final years of her life she bore out the name which her adopted people gave her in her youth as the bride of King Edward—"Princess Sunshine."

Diathermy in Pneumonia

By LLOYD M. OTIS, M. D.

Celina, Ohio

One should see a pneumonia patient treated in order to appreciate the changes in his signs and symptoms. Shortly after diathermy is begun, the operator sees his patient becoming more comfortable. Respiratory effort is lessened; his expiratory grunt disappears. If he is cyanosed, you will see this condition disappear. Several hours after treatment, the patient seems almost completely relieved, symptomatically. He generally enjoys his first sleep and the physician sees his patient on the road to recovery.

Physiotherapists can definitely make one statement: That, regardless of the stage at which diathermy is begun, the disease is greatly shortened; the temperature curve goes down after the first or second treatment; and the patient is relieved of all symptoms, a severe disease being converted into a mild one. I can express one opinion that will be borne out by any one who has employed diathermy in pneumonia, and that is: If all cases were started on this treatment within 48 hours from their onset, the medical profession would never see another case of typical pneumonia.

I have picked out at random from my pneumonia cases the type the physician ordinarily meets and will show the response of each to the treatment. In this list are the following: lobar, lobular, central, unresolved, and two postoperative cases.

Lobar Pneumonia

Case 1.—Mr. H. L.: Confectioner, age 53. On April 3, 1924, he had a chill lasting about 20 minutes. In a few hours he developed a severe pain in the lower right chest, considerably aggravated by a dry cough. At noon, the following day, he was removed to the hospital. Upon examination, the lower lobe of his right lung presented increased tactile fremitus; dullness upon percussion; tubular breathing upon auscultation. The sputum was blood-stained; temperature 104° F.; pulse 144; respiration 30; blood count 28,250 leucocytes. Diagnosis: Lobar pneumonia.

Treatment with diathermy was instituted, the first application lasting 45 minutes. At 3 P. M. the same day, the temperature was 103° F.; pulse 120; and the patient felt more comfortable. In the evening he sweat freely and rested well after midnight. At 6 A. M. the next morning, his temperature was 101° F.; pulse 112; respirations 28. At 7:30 A. M., another diathermy treatment was given, and, at 9 A. M., the temperature was 99.2° F.; pulse 122; respirations 28. In the afternoon, another treatment was given lasting one hour, and, at 6 P. M., temperature was 100°; pulse 106; respirations 28. At 6 A. M. the following day, his temperature had dropped to 98.2°; pulse 86; respirations 22; at 6 P. M., however, his temperature was 99.2°; pulse 100; respirations 28. This was his last rise of temperature, crisis taking place on the 3rd day. Daily treatments with diathermy were continued until he left the hospital on the 6th day. Five days after the onset he was walking about the hospital.

Lobular Pneumonia

Case 2.—Mrs. A. W.: age 45, housewife on farm. On December 28, was taken with chills and shortness of breath. Ached throughout body. On Sunday, December 30, she began to have a slight cough, which was painful and at times blood-streaked. Shortness of breath grew worse and patient became cyanosed. When, on January 6, she was brought to the hospital, x-ray showed a severe bronchopneumonia in right lung and some involvement of upper left lobe. Right lung almost completely consolidated. Patient entered with temperature 102.6° F.; pulse 130; respirations 48. Diathermy was given the evening of entrance. The next day two treatments, and, at 9 P. M., a little over 24 hours after entrance, she had a temperature 99.6° F.; pulse 100; respirations 36. It was not until the fourth day that respirations were normal, and from then on the patient was in good general condition. Began walking on sixth day. Discharged the seventh day. X-ray on January 12, six days after entrance, showed lung entirely cleared up with exception of slight peribronchial thickening.

Unresolved Pneumonia in Left Lung, Later Complicated by Central Pneumonia in Right

Case 3.—Mr. J.: age 20, developed left lobar pneumonia about the 7th of January, 1925. He went through the disease without any complications and seemed to be convalescing normally until January 30, when he showed an elevation of temperature and complained of pain in the right lung. Dyspnea was severe and pulse 140. I was called in consultation February 2, and we were unable to diagnose the condition except that his left-sided pneumonia had not entirely resolved and a dull spot was found about three inches in diameter on the right. The extreme pain led us to do a paracentesis, expecting to find a pleural involvement. We moved him to the hospital, and the x-ray cleared up the diagnosis. There was a central pneumonia in the right chest and an unresolved pneumonia in the left.

At the time he entered the hospital, 6 P. M., he had a temperature of 102.5° F.; pulse 145; respirations 38. Diathermy was started at once and he slept for two hours after the treatment. At 7:30 P. M., the temperature was 101.2°; pulse 140; respirations 34. He was, at this time, perspiring freely. During the night he still had considerable pain and diathermy was repeated at 2:30 A. M. Treatments were given for 40 minutes on each side of chest. At 5 A. M., his temperature was 99°; pulse 126; respirations 32. In the afternoon, he developed a severe attack of hiccough and the third diathermy treatment was given. The hiccough stopped, and at 6 P. M., his temperature was 98°; pulse 100; respirations 18. The following day he expectorated considerable bloody sputum and perspired freely. Diathermy was continued twice daily. Cough stopped on the fifth day. His strength returned rapidly, his appetite was good, temperature and pulse normal. He was kept in bed eleven days and in the hospital two weeks in order that a good convalescence might be obtained.

Postoperative Pneumonia

Case 4.—Age 23, operated upon January 21, 1924, for hernia. On January 24 at 4 P. M., he had a temperature of 102.6° F.; pulse 116; respirations 30. A physical examination disclosed the signs of a postoperative pneumonia. At 6:30, diathermy treatment was given. The next day at 4 P. M., his

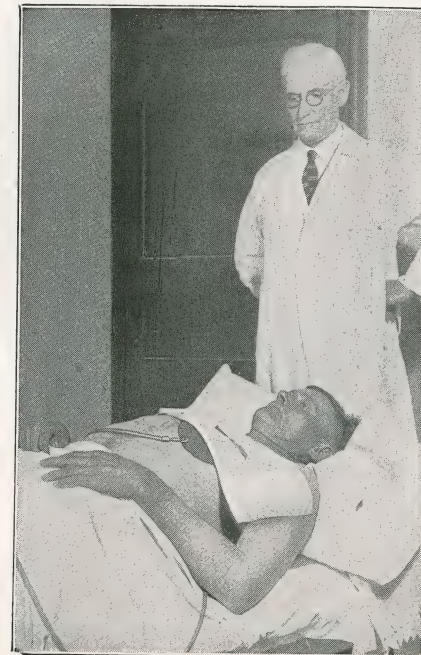
temperature was 101.8°; pulse 110, respirations 28. Diathermy treatment was given twice each day and on the third day his temperature was 99°; pulse 82; respirations 22. After that, his temperature, pulse and respiration remained normal.

Technic

This is comparatively simple. The bipolar method, through and through, is used. Two electrodes about 4x6 inches are placed over the affected lobes, one anteriorly and the other posteriorly. The electrodes can be cut from a strip of block tin, or German silver mesh may be used. Hot soap suds is applied to the skin and electrodes. The current is started at 300 to 400 milliamperes for two or three minutes, then raised to 600 to 700 ma. for two or three minutes and gradually advanced in this way up to the patient's tolerance of heat, which will vary from 1700 to 2300 milliamperes. It is maintained at this heat for not less than 30 to 40 minutes. Then the rheostat is gradually reversed during about 5 minutes. The entire treatment requires from 45 minutes to one hour.

Conclusion

The practice of medicine has been given a valuable therapeutic agent in diathermy. Pneumonia, in the first 48 hours, is generally aborted. Applied later, the disease is considerably shortened, the patient's symptoms reduced to a minimum and the disease freed of its high mortality.



Diathermy treatment of Pneumonia.

Diathermy in Pneumonia Following Typhoid and Complicated by Diabetes

By HARRY E. STEWART, M. D.
New Haven, Conn.

Case.—Mr. F. A. V., a banker, aged sixty, married, with six children. The patient's mother died of pneumonia complicated by diabetes at the age of sixty. There had been excellent general health throughout all adult life until six years ago when diabetes developed. The patient was one of the very first to receive insulin and has been under insulin and special diet for three years.

On December 1, 1924, the patient complained of general aches and pains all over the body especially in the abdomen, with slight fever and diarrhea. There were three cases of influenza in the house and his complaint was first diagnosed as influenza.

The temperature ran from 99° to 102° F. for two weeks gradually subsiding, when it again rose sharply to 102° and above. A Widal test was taken and found positive for typhoid. This second rise indicated his first relapse which ran from the fifteenth to the twenty-fifth day of his illness, during which time his average calorie intake was but little over six hundred. He had hallucinations, twitching of the limbs and marked traces of sugar in the urine. The second relapse lasted from the twenty-seventh to the thirty-seventh day when it remitted until the fifty-first day, at which time there occurred a third relapse of typhoid. He suffered at this time from a persistent carbuncle.

The temperature reached normal on the sixtieth day remaining so until the sixty-fifth day when a patch of lobular pneumonia developed in the left lower lobe, fever reaching 104° F. on the seventy-second day.

The patient was seen by Harlow Brooks, Evan Evans, G. Reese Satterlee, George Draper and Warren Coleman in consultation with Barnesby and Glafke in charge of the case. On the seventy-sixth day there developed a second patch of pneu-

monia on the right side. At that time his blood sugar was 187, white blood cells 6700, 85 per cent polymorphonuclears, and the stool was negative for typhoid. On the eighty-third day there developed a third pneumonic process in the upper left lobe, which patch persisted, his febrile reaction never reaching 101° F. until the ninety-fourth day when I first saw him.

His general condition at that time was as follows: Pulse rapid and slightly irregular. Much pain in chest and coughing heavily. Extremely nervous, unable to sleep more than thirty minutes at a time. Expecterating brown blood-streaked mucus, limbs twitching a great deal. Nervous reserve entirely gone. He was receiving forty units of insulin, fifteen minims of digitalis twice daily, and one half grain of codeine every four hours which was not quieting the pain nor inducing sleep. Urine showed two plus sugar, blood sugar 256, 53 per cent carbon dioxide, red blood cells 4,210,000, white blood cells 8,200, 74 per cent polymorphonuclears.

An anteroposterior diathermy by two five by seven flexible metal electrodes was given for twenty-five minutes at 1800 milliamperes, passing directly through the heart area. The appearance of the patient changed remarkably during the first treatment. The lines of pain and anxiety faded from his face, his pain remitted, there was an improvement in color and he slept two hours and thirty-five minutes following the first treatment, waking up greatly refreshed.

The treatments were repeated five times daily with a steady improvement in the character of the pulse. This point is emphasized because one or two writers have recently expressed the fear of ill results following diathermy through the heart in pneumonia. It might be noted here in passing that in some eighteen to twenty cases where the location of the pneumonia made the passage of the heat through the heart area desirable there was a markedly greater improvement in the quality of the pulse than that which followed the treatment of pneumonia in other locations.

On the fourth day of diathermy treatment this pneumonic patch which had remained solid for fifteen days, entirely disappeared to physical signs and the patient's general condition

seemed much improved. Then his temperature rose suddenly to 103° and a fourth distinct patch developed in the left lung outside the heat pathway directed at the former process. In the opinion of the medical men then attending, this sharp febrile reaction to the fourth pneumonic area was made possible by the rest and storing up of energy secured through the relief diathermy afforded him. The diathermy treatment was immediately applied to the new area, with a steady and satisfactory reduction in temperature and improvement in general condition. The area cleared up on the seventh day. Diathermy was discontinued on the tenth. At that time his blood sugar was 237, red cells 4,296,000, white cells 8900, polymorphonuclears 74 per cent, hemoglobin 87 per cent. The patient was receiving two thousand calories daily.

For two weeks his condition slowly improved, the lungs remained clear, when on the one hundred and twenty-third day of his illness another small area of consolidation in a new location in the left lung appeared. Diathermy was again begun and his temperature returned to normal and the spot cleared in three days after which diathermy was continued three times daily for two weeks, twice daily for an additional week, with large plates to cover the whole lung in the attempt to raise his local resistance and prevent a further process developing. This plan was entirely successful, his temperature has remained practically normal for five weeks, and the patient is now able to be outdoors.

Summary

The history of this case was considered of especial interest since the age of the patient, the complications and the long duration of the disease made it an extremely difficult one. The very low resistance of diabetics to infections of all kinds and the fact that typhoid gave this patient a leucopenia, when to combat his pneumonia he needed a leucocytosis, were the two outstanding difficulties with which we had to contend. The favorable effect of diathermy upon his condition was so clear cut that in the opinion of the patient, his family and the physicians who followed the case it was the determining factor in his recovery.

(From Med. Jour. and Rec., Dec., 1925)

A Technic for Hypertrophied Turbinates

B. L. Doane, M. D., of Los Angeles, Calif., reports an interesting and efficient method of permanently shrinking chronic hypertrophied turbinates by means of diathermy.

The chronic form may consist mainly of bone, which is not amenable to this form of treatment, or of inflammatory connective tissue and hypertrophied mucous membrane, which is the form in which his technic has given such excellent results. This form of hypertrophy is the causative factor in recurrent coryza and rhinitis, inflammations of the lachrymal sac and conjunctiva, chronic catarrh and bad respiratory odors due to decomposing mucus, and numerous conditions dependent upon nasal obstruction.

Dr. Doane uses two electrodes, neither of which is sharp, as there is no cutting to do. The single blade is $\frac{3}{8}$ inch long and $\frac{1}{16}$ inch wide. The double blade is $\frac{5}{8}$ inch long, fork shaped, flat, and straight; each blade of the pair being $\frac{1}{16}$ inch wide. The blades are $\frac{3}{32}$ inch thick and blunt at the ends. Hard-rubber or Bakelite insulation is used up to the beginning of the blades.

The mucous membrane is first anesthetized with cocain or butyn in the usual manner. An indifferent electrode of large area, 3x6 inches, is placed at the back of the neck. The applicator for the nose is connected to the medium voltage terminal. A milliamperage of about 1200 or 1500, with a fine spark, should be used.

Separate the nasal alae with a nasal speculum, and apply the applicator to the turbinates with a firm pressure, keeping away from the septum. Test out the patient with one or two short flashes of current. If he can tolerate it, give him about five seconds. Repeat the application on whatever areas may be necessary.

This results in coagulating a strip of the turbinate. The usual reaction appears, with swelling and congestion in two or three days, followed by sloughing of a small portion, and finally healing with contraction of the scar, and permanent shrinking of the turbinate.

Drs. Helwig and Hammon to Return

The many physicians who have asked for a repetition of the tonsil clinic conducted at our January meeting by Drs. Helwig and Hammon will be interested to know that these men are to conduct another clinic at the March 8th meeting. The technic they demonstrate has been successfully used in many hundreds of cases, and will be of value to every physician and surgeon who has occasion to perform the tonsil operation.

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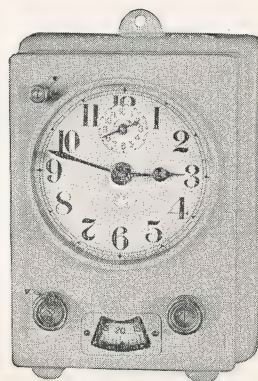
If an infant has rickets and an idiosyncrasy against cod liver oil, actinotherapy in the form of sun baths or ultraviolet ray exposures should be employed. Cod liver oil extract and irradiated foods have not yet been developed to a sufficient extent to be commercially obtainable in reliable form.

(Abs. from J. A. M. A.)

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Development of a Physiotherapy Department in a Modern Hospital

By R. B. H. GRADWOHL, M. D.

St. Louis, Mo.

The results of treatment of many conditions by physiotherapy justify us in asserting that the modern Hospital that does not support this department is not fulfilling its proper function nor performing its full duty to the public. The vast amount of research and clinical trial that has attended the development of this part of the remedial art and science has proved certain practical advantages of these measures. We do not wish to decry drug therapy nor deny the achievements of modern surgery, rather we do insist that physiotherapy take its proper place alongside these two methods of application of the healing art.

We allude particularly to diathermy, high frequency, the Morse Wave generator, fulguration, ultra-violet and radiant light. The results of treatment with these modalities have convinced us that we may obtain startling improvement and cure in many cases hitherto considered "beyond the pale." This applies to many conditions that are met with in Hospital practice. In order properly to see these results we must utilize first class equipment. An investment of three thousand dollars, or even less, will equip a Hospital with first class apparatus. As the work increases, more and more units may be installed. The units must be located in that part of the Hospital which is accessible to the majority of patients. The room should be large enough to permit patients to be wheeled or transported by litter or carriage thither. There should be a comfortable couch on which certain patients may recline; a good comfortable flat operating table is very useful. The four principal pieces of apparatus should be located on a line, the ultra-violet light, air-cooled and water-cooled, on one side; the diathermy and high frequency in the middle; the radiant light next in line, and finally, the Morse Wave. This should be a semi-circular arrangement revolving about the end of the operating table.

The room should be under the direction of a competent

physiotherapist; by that we mean one who has been trained in the technique and rationale of this line of work. Under him, on duty at all times, or within call, there should be a full time physiotherapy technician, corresponding to the Clinical Laboratory or X-Ray Technician. This technician should honor requisitions of the staff for treatments for various patients and should map out the day's work as far in advance as possible, so that unnecessary and tedious waiting is eliminated. Of course, the day's routine must at times be interrupted by emergency treatments, such as diathermy in pneumonia cases, etc. The technician should collect the requisitions each day, place them at hand for the staff member in charge of the department and be ready at all times to consult on all cases with the staff and the staff member in charge.

Fullest records should be kept of each patient treated, the kind of treatment, the length of time, etc. These should be made out in duplicate, one for the patient's chart, the other for the permanent record of the department. At the end of each month, the department should make a report to the monthly staff meeting, number of cases treated, results, etc., together with a financial report on the income and upkeep of the department. Interesting cases should be chronicled in the Hospital Bulletin or any other publication.

We cannot lay too much emphasis on the necessity of making this department a separate one from all other departments. Just now in many places the physiotherapy department is going through the same evolution which attended the other laboratory departments of Hospitals, namely, the hit-or-miss method, where everybody or anybody is allowed to do the work. We remember the unhappy days of the Clinical Laboratory of the Hospital, when the work was looked after by the interne "when he didn't have anything else to do," or perhaps by a man in general practice, who would run in occasionally (never when he was wanted) and attempt to do the Wassermanns or the Urines only to be interrupted by a call to an obstetrical case or what-not. Naturally, no laboratory service worthy of the name was ever given until the department was made a full time proposition, with some one always in the laboratory, both to handle

the equipment properly and to perform the work satisfactorily. Physiotherapy will never come into its own until such a department is operated in every Hospital. No argument that the Hospital cannot afford to do this can be made, for the reason that the results are too definite and clean-cut to permit one to argue them down. Since certain results *are* obtainable only with physiotherapy, therefore, there isn't anything left for the Hospital to do but to install such a department and to operate it properly. Finally, sufficient fees may be collected to pay all operating expenses. Thus we feel we have offered many good reasons why every American Hospital should have a well organized physiotherapy department.

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Science Rules Human Life

Dr. William Mayo recently pointed out to a Chicago audience that 75 per cent of human energy is used up in heating and bodily work, over which the individual will has no control. Scientific law is being followed in the provision of diet, drink, clothing, shelter, and respiration, until we can foresee the day when three-quarters of our life effort will be conducted along scientific lines, whether we will or no.—Chicago Tribune.

That's What I Call a Friend

One whose grip is a little tighter,
One whose smile is a little brighter,
One whose deeds are a little whiter,
That's what I call a friend.

One who'll lend as quick as he'll borrow,
One who's the same today as tomorrow,
One who will share your joy and sorrow,
That's what I call a friend.

One whose thoughts are a little cleaner,
One whose mind is a little keener,
One who avoids those things that are meaner,
That's what I call a friend.

One when you're gone who'll miss you sadly,
One who'll welcome you back again gladly,
One who though angered will not speak madly,
That's what I call a friend.

One who is always willing to aid you,
One whose advice has always paid you,
One who's defended when other flayed you,
That's what I call a friend.

One who's been fine when life seemed rotten,
One whose ideals you have not forgotten,
One who has given you more than he's gotten,
That's what I call a friend.

—Leslie Clough.

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Physiotherapy in the Disabilities of Industry

By WILLIAM D. McFEE, M. D.

Boston, Mass.

The early treatment of sprains with light or diathermy followed by the mechanical effect of the static or the sinusoidal currents, resulting in the relief of pain and the prevention or removal of stasis, is one of our noteworthy achievements. The daily treatment of these cases is followed by a rapid restoration to normal function, and the patient in many instances may meanwhile pursue his accustomed activities. In our choice of physical treatment for sprains and allied conditions of injury, we must exercise judgment, first determining the diagnosis by all available means (including the X-ray), and then select and adapt whichever method has given the best results, as shown by our previous observation and experience; no fixed rule can be followed as a constant guide.

If the patient coming to me has an injury such as a strain or a sprain wherein the superficial tissues are mainly involved, it is my custom to first give the part to be treated a thorough application of deep therapy light of high candlepower, which might be termed superficial baking, and which will stimulate the superficial circulation, producing a hyperemia, and thus relieve the painful congestion. This treatment should continue from one-half to one hour, and at as near a distance as the patient can tolerate with comfort; care should be exercised in not allowing the heat from our light to be concentrated on one part long enough to produce a blister, which may result in much discomfort or even an unsightly scar of tissue from the burning. Immediately after this treatment the static wave current or the sinusoidal is applied to the injured parts.

In these mechanical applications it is always well to start with a very small dosage, gradually increasing, and always keeping within a limit which will not cause too painful contractions; this mechanical treatment has the effect of improving the circulation through stimulating the function of blood vessels and

lymph channels, thus removing stasis and other effects of primary congestion, as well as preventing the formation of stiffness through the thickening of tissue or the troublesome growth of fibrous adhesions.

When the injury involves the deep structures, the use of diathermy instead of light is preferably indicated because by that means we get a thorough saturation with heat, due to the resistance of the tissue between the opposed electrodes through which is passed the current from our high frequency apparatus; this is sometimes referred to as deep or internal baking. This application should also be followed by one of the mechanical agents mentioned.

Whenever possible the best results will be obtained from daily treatments, particularly during the first few days, after which we may get along all right with an interval of two or three days between treatments; this method of handling these conditions results in a great reduction of the total time necessary for treatment, also in much comfort and saving to the patient, in that he is soon able to attend to the duties of his occupation.

Contused wounds and bruises are markedly relieved, and their recovery hastened by the application of deep therapy light combined in some instances with ultra-violet radiation; in these cases deep therapy light is applied to the injured part at a distance of comfortable toleration, usually fifteen to twenty inches, for one-half to one hour. The use of ultra-violet radiation from the air-cooled lamp, either following this or in its stead, will give an added effect of sterilization and stimulation.

Fractures make a better and surer recovery when treated by diathermy, and our patient will be made much more comfortable thereby. Lacerated wounds will heal more readily, with less pain, and the development of sepsis, with its interference with primary union, is avoided in practically all cases wherein deep therapy light and ultra-violet radiation are used locally as part of their treatment. The symptoms of nervous shock which accompany many of the severe injuries of industry are greatly relieved by such general measures of physiotherapy treatment as the application of deep therapy light to the spine, or the use

of the light cabinet bath, followed by the needle shower spray, or shower bath of water.

After recovering from the acute effects of injuries, these patients are all greatly benefited by such general tonic measures of treatment as the static wave current, applied to the spine or properly administered general vibration, which includes the use of the vibrator over the spinal inter-vertebral spaces, over the splanchnic area, and to the various motor nerve points of all muscles.

The heat from therapeutic lamps is comparatively superficial, as is also that obtained from vacuum tube electrodes with high potential currents; the use of non-vacuum tube electrodes, with currents of high potential, gives a better penetration of heat and is much more satisfactory. The one demonstrable physical result of diathermy is the production of heat which is generated in the entire area between the electrodes because of the resistance which the tissues offer to the passage of the high frequency current.

A marked increase of temperature can readily be felt in tissues treated by this method, and animal experiments, conducted by the writer and his co-workers at the Walter Reed Hospital, Washington, D. C., in which thermometers were sunken at various depths in tissues and organs, proved conclusively that by the action of diathermy any desired degree of heat may be obtained under perfect control, and for any length of time, the heat in all cases being generated in the entire mass of tissue between the opposed electrodes.

Mechanical effects are produced by the interrupted galvanic, the faradic, the sinusoidal and static currents, or the high potential resonator discharge; also by vibration, massage and exercise. These are useful for purposes of stimulation, and are reconstructive and eliminative in action.

For chemical effect the positive pole of the galvanic current is acid in reaction, and the negative is alkaline; through this chemical change we may make use of ionic medication or of ionization, whereby we can drive various drugs into the tissues, metals entering under the positive, non-metals under the negative pole. The chemical effect of ultra-violet rays is now well

known; the ultra-violet and X-rays are bactericidal in action to a marked degree, stimulating and irritating.

The treatment of fibrous adhesions in and around joint structures offers a wide field for discussion, but the time at our disposal will permit merely a brief description of some observations along this line. Properly speaking, ankylosis is chiefly due to changes in the articulation of the bones; ankylosis begins when the pathological process that causes it has ceased to exist. The early pathological condition should be the object of treatment rather than waiting for the development of ankylosis; the value of early treatment to prevent extensive degenerative changes cannot be too strongly urged.

Having a condition of fibrous ankylosis to overcome, we first get the greatest help from the penetration of heat, preferably that obtained from diathermy; following this, and while the heat is still retained, we employ one of the mentioned mechanical agents, our choice of which one is to be used depending on what is available in our equipment, and where we have the static and sinusoidal currents or the vibrator, we will use that one which is best adapted to the part to be treated, whether large or small in area, superficial or deep, even or uneven in contour. It is quite generally agreed that the mechanical treatment is best preceded by the use of some heat producing agent.

The use of massage or vibration, preliminary to operation of scar tissue, is valuable, loosening the scar, and thus making the work of the surgeon easier; heat in some form should always precede this massage or vibratory treatment.

Patients with strain in muscles and joints, complaining of pain, headache and bacache, conditions so commonly met with among industrial workers, and the cause of which is not always easy to determine, but whose basic factor is usually some neurotic condition, frequently come to us for treatment, having failed to get even a measure of relief by the ordinary methods. These patients quickly improve and are soon able to return to work with greatly increased efficiency by the employment of the various physical measures of treatment.

(Abs. from Am. Jour. Phys. Ther., Sept., 1925)

A Scientist's View of the Therapeutic Lamp Subject

An ancient Indian Chief broadcasting over "KFI" in Los Angeles, California, recently stated that white people were not so healthy now as they should be and he said:

"Pale Face too much house."

What the old chief meant was that the human frame is a machine designed to obtain most of its nourishment from sunlight, either directly or indirectly.

We in our modern civilization carefully cover our bodies from sunlight and live largely within doors.

Pure sunlight at high elevations on mountain tops, consists of a light which is made up of all the rays of the spectrum in perfect balance. These are necessary for the complete nourishment of any form of life.

The therapeutic value of light was at one time thought to consist of the heat or lower red rays, but we now recognize the fact that it should contain a balanced collection of all the rays including the higher or more actinic part of the spectrum.

The colorless incandescent globe in a therapeutic lamp emits the light generated by the filament itself which contains a large proportion of red rays and is therefore unbalanced. To remedy this the blue globe has been designed with just enough blue in its composition to filter out the superabundance of the lower red rays and give a resultant ray which is an almost perfect imitation of pure sunlight on the mountain top and is therefore perfectly balanced.

The therapeutic value of the balanced ray has been recognized by those who have studied its action on the human tissues. The lower component of this ray or the red portion of its make-up generates heat at the surface of the tissue in such a way as to assist the higher rays of the light to penetrate within the tissues in the form of light. After they have so penetrated these higher rays become broken down due to the resistance offered to their penetration and they, themselves, set up heat rays in the interior.

It will be seen that they are therefore just as important to a

therapeutic lamp as the explosive is to the charge in a gun, in so far that they are the penetrating portion which enables the light to produce its therapeutic action at a greater depth.

The blue globe in the therapeutic lamp produces an almost ideal artificial sunlight which the old Indian Chief believes to be the crying need of the human race at this time.

—Wm. L. Parker, B. Sc.

Dr. Breuer Prefers the Clear Bulb

The literature states that blue and green light are sedative to inflammatory pain, while red and yellow are irritating. This statement has a sort of apocryphal appearance to me; I have been totally unable to confirm it by my experiments. My own work with it, would seem to confirm rather the following theoretical conception:

Whatever the color is, it will filter out some portion of the spectrum, whereas a colorless glass will pass all the rays from the incandescent filament except the ultra-violet. Therefore, it stands to reason that you are getting the most energy through a colorless glass.

It is true that a patient can endure a light closer to his skin if there is a blue glass over it, than if it is colorless. That is because the glass absorbs some of the rays emitted by the filament. I have not been able to prove, nor to suggest even, that the blue glass cuts down only the rays that affect the sensory nerves, and keeps the rays that produce our desired tissue reaction. The lessened sensory effect is really due to a cutting down of the total efficiency of transmission of the light; quite the same effect that would be obtained by putting the light further away.

In fact, the blue glass cuts out rays that we really need—the yellow, red, and infra-red; these are the longest wave-lengths, and the most penetrating rays. They are the ones that really do the “deep therapy” work.

My opinion is that the clear glass is the best. In case special colored rays are desired for some particular case, screens may be used. The best bulb I have ever found, is the carbon fila-

ment in the nitrogen bulb; that emits a large volume of infra-red. But I have never seen these bulbs in larger than 50-watt sizes.

—Miles J. Breuer, M. D.

Treatment of Scars with Radiant Therapy Light

By C. W. LYONS, M. D.

Ellinwood, Kas.

A girl of eleven years was struck on the cheek with a swinging board while playing at school March 4, 1925. The skin was not broken but considerable swelling followed. When the swelling subsided the skin became adherent to the bone leaving a scar $1\frac{3}{4}$ inches long and $\frac{3}{8}$ of an inch wide and you could almost lay your finger in the hole it made in her cheek.

When she was brought to me on March 27th, the tissues were very hard and fibrous and the skin was firmly adherent to the bone and the color typical of scar tissue. I suggested that we try the deep therapy lamp.

After protecting the rest of the head with several thicknesses of heavy Turkish towels, the 1500 Watt lamp was placed within 12 inches of the scar tissue for 15 to 20 minutes daily for thirty days and twice weekly for ten more treatments.

After the first few treatments the tissues began to soften and regain a little of their normal color. At the end of thirty days, the skin had begun to loosen slightly from the bone and the cavity was but one-half as deep as it was at the beginning and the skin had almost regained its normal color.

Massage was then used in conjunction with the light and by the first part of May, there was very marked improvement and the scar showed but little but still there was a saucer shaped depression.

Treatments were discontinued then, but the improvement continued until at this time, July 20th, recovery is complete and there is no sign of the scar left. The skin has regained its color and all the underlying tissues are soft and normal. The result is perfect, thanks to physiotherapy.

(From *Am. Jour. Phys. Ther.*, Sept., 1925)

Diathermy in Gonorrhea

By GEO. W. FUNCK, M. D.

Chicago, Ill.

The successful treatment of gonorrhea with diathermy consists in first accurately diagnosing the location of the infection and then selecting the proper method of applying heat to the parts involved. The results are always better than can be obtained by the older methods of treatment without diathermy, but depend upon various factors, such as the virulence of the infection, the extent of the pathological changes produced in the tissues by the gonococcus and its secondary invaders, the natural resistance of the patient, etc. For the best results diathermy should not be used as an exclusive method of treatment to the neglect of everything else, but should be combined with other forms of therapy; diet, rest, proper but not over-medication, both local and constitutional, quartz light, etc.

Recent acute gonorrheal infections, if not previously improperly treated, are pure gonococcus infections involving only the distal end of the penile urethra. The gonococcus is comparatively easily attenuated or killed by heat. For quick results, long treatments, one or more daily, are necessary. Several methods have met with marked success. Suspend the penis in a beaker containing salt solution as the active electrode, the patient sitting upon the edge of a chair upon which is placed the indifferent block tin electrode. Or, have the patient lie with a large indifferent electrode under the hips; the active electrode being of silver mesh, well soaped, wrapped around the distal one-third of the penis and placed in a small saucer over the pubis to prevent short-circuiting. In both methods the temperature is raised to the patient's tolerance and maintained for at least one hour for each treatment. These methods have the advantage of requiring no intra-urethral instrumentation, which is generally considered undesirable in acute infections. The Corbus urethral electrode has the advantage of permitting the insertion of a thermometer, so that the temperature can be maintained at the optimum of about 107°. The indifferent electrode may be placed over the abdomen or under the hips. The

intravenous administration of from 5 to 15cc of a 1% aqueous solution of mercurochrome 220 immediately preceding the diathermy improves the results.

Electrotherapy in Arthritis

By W. C. S. KOEBIG, M. D.

Los Angeles, California

When a patient comes to our office and we see from the history and general examination that we have arthritis to deal with, the first thing we do is to look for its cause. The teeth, tonsils, para-nasal sinuses, genito-urinary, intestinal tract, diet and the endocrines are carefully gone into. A history of trauma or exposure to the elements means to us simply one of the contributing factors, and although the patient may definitely state that a certain exposure to cold or accident was the cause of his trouble, we have found that this merely has brought about an exacerbation of symptoms already present and has forced them upon his attention. A number of exceptions to this rule have, of course, been observed, namely in trauma of the spine and in the larger joints where we could find no evidence of an associated arthritis in other joints. In some cases we can find no contributing focus at all.

Having found the causative factor, which by the way is not always easy, an attempt at removal is made and the symptomatic treatment is pursued. It is a known fact, that following the removal of the active focus of infection, the symptoms often increase; this is especially true when tonsils are removed. The patient will complain bitterly and usually says that he is a great deal worse. Years ago this was very discouraging, but with the aid of our present day physio-therapeutic measures, the patient can be made comfortable and very quickly so in most cases.

The results of treatment in atrophic and hypertrophic arthritic conditions have been varied. We have been able to relieve most of the patients of their pain almost immediately, but the relief was not permanent in the majority of cases. However, I have in mind five cases where joint motion was

improved and the ability to walk increased, and one of these who was unable to walk up and down stairs, can now do so. We were fortunate in finding the foci of infection in all of these cases and in eliminating the same. The symptoms in one case of this group were due to disturbed endocrine balance at the menopause; one was suffering from endometritis and had a hysterectomy; again the teeth were to blame; while in another case the amoeba hystolitica was found in the stool. A great deal of temporary relief was given, for which the patients were very grateful, as they had come to me originally with almost unbearable pain. The painful joints were at first put to absolute rest and during this period sedative diathermy, baking and sinusoidal massage were used. As soon as possible, gradually increased active motion with massage was instituted in addition to diathermy. This group of patients has been under treatment now for 12 to 18 months; they are improving daily. However, in no one of them is there a disappearance of the bony deposits and I do not believe, even in those cases where deposits have recently appeared, that any dissolution can be obtained by the non-operative therapeutic measures of which we are at present cognizant. This is also true as to the restoration of destroyed joints.

Gonorrheal arthritis of the acute or subacute type, usually yields nicely to diathermy when treated in conjunction with a capable genito-urinary specialist. The urologist will either find his focus of infection in the vas deferens and do a vasectomy or find it in some other location in the genito-urinary tract and carry out the necessary treatment before referring the case to an orthopedist. Then sedative diathermy is used on the affected joint beginning with a 10 minute step up to 250 or 300 where it is held for 20 minutes, followed by a 10 minute step down, gradually increasing the dosage daily as the signs and symptoms warrant. In the group of cases that we have had under our care, alleviation of the symptoms began in 10 days to two weeks and the patient was discharged at the end of periods varying from three weeks to two months. In this particular type of arthritis, diathermy alone was used.

(Abs. from *Am. Jour. Phys. Ther.*, Dec., 1925)

Ultra Violet Light in Tinea Versicolor

By ALFRED A. STOREY, M. D., and E. N. KIME, M. D.—
Indiana University School of Medicine

This infection affects usually the anterior aspect of the body and is localized more on or around the sternum. It is characterized by a chronic eruption of the skin, in brownish yellow color efoliating branny patches. It is due to *Microsporon furfur*.

In this case the eruption was more marked in posterior aspect of the body on each side of the vertebral column in the dorso-lumbar region.

First ultra violet exposure was of the air cooled lamp at 10 inches distance and for a period of 1 minute 7 seconds. This did not produce any visible hyperemia, although it was observed that the fungus remained stationary, as evidenced by temporary arrest of the invasion of more skin surface. This observation lasted about 8 days.

Effect of water cooled ultra-violet lamp was tried at same sitting as that of above exposure. The exposure by the water cooled lamp was 1 minute and 47 seconds, the quartz glass resting on the skin. This produced a rather well marked hyperemia followed by tenderness and efoliation in 3 days, lasting for two weeks, and with complete disappearance of the eruption. This experiment was performed on an area of about 55 sq. C. M.

Two weeks after the first exposures, an air cooled ultra-violet lamp exposure of 2 minutes and 5 seconds was done in the dorso-lumbar region, where the skin was well marked with the eruption.

The distance was same as in first sitting—10 inches; but the time was prolonged to 2 minutes and 5 seconds. In about one hour a prominent hyperemia was present. This kept increasing for the next three hours. The following night individual could not lie on his back because of the hypersensitiveness, produced by the effects of the ultra-violet light. The following day there was a mild itching sensation. These symptoms: hypersensitiveness, mild pruritus, and discomfort to friction even to individual's own clothing—were present or persisted for one week,

increasingly up to the fourth day, and retrogressing from 4th day till the 9th day when all symptoms disappeared, except that the discoloration—a reddish brown color, still remaining up to the 4th week from date of exposure though became less conspicuous with elapse of time.

The effect on the skin eruption was very decisive for the eruption and discoloration caused by the fungus entirely disappeared in about five days from date of exposure.

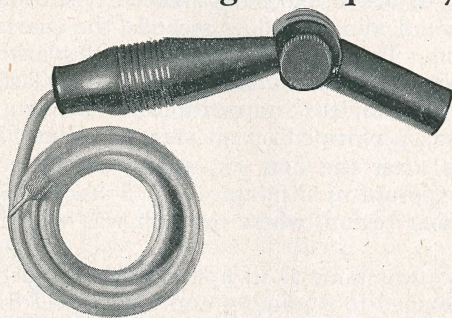
It seemed evident that the time of exposure should be about two minutes and five seconds. This would eliminate practically all unpleasant complications, such as hypersensitivity, pruritus, and dermatitis.

CONCLUSION

The ultra-violet air cooled lamp at 25 C. M. distance and two minutes and five seconds exposure will entirely destroy tineaversicolor in a single seance.

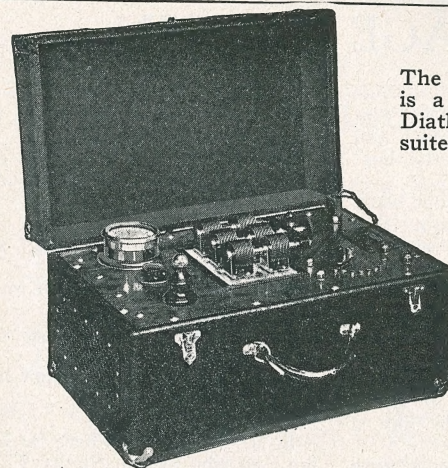
(From *Am. Jour. Phys. Ther.*, Nov., 1925)

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A PAGE OF FUN

The convalescent — "Did you have my brown suit cleaned and pressed while I was in the hospital?"

His wife—"No, I had your black suit fixed up; I thought that would be better in case anything should happen."

□ □ □

The golfer nonchalantly stepped up to the tee and swung one of those carelessly careful drives. The ball sailed straight down the fairway, leaped gayly across the green and dived into the hole like a prairie dog.

"What have you suddenly gone crazy about?" inquired the golfer's wife, who was trying to learn something about the game.

"Why, I just made a hole in one!" yelled the golfer as he essayed a double handspring with a wild gleam of delight in his eye.

"Did you?" sweetly said the little woman. "Please do it again, dear. I didn't see you."

—Town Life.

Jimson—"What did you and your wife quarrel about?"

Simpson—"Well, she said a certain woman was beautiful and I agreed with her."

□ □ □

Father—"Great heavens, son, how you do look!"

Son—"Yes, Father, I fell into a mud puddle."

Father—"What! And with your new pants on, too?"

Son—"Yes, father, I didn't have time to take them off."

□ □ □

S. S. Teacher—"Where do little boys go who fish on Sunday?"

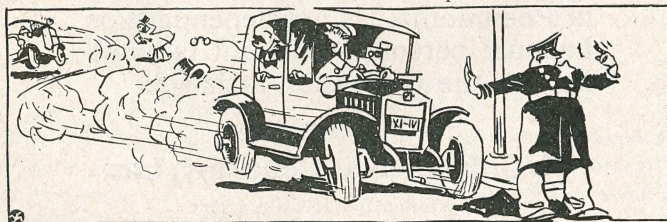
Johnny—"Over to the deep hole on Perkins' farm."

□ □ □

A widower was to be married for the third time, and his bride had been married once before.

The groom-elect wrote across the bottom of the wedding invitation sent to a friend:

"Be sure to come; this is no amateur performance."



Passenger in wildly careening taxi: "Go easy, driver; this is my first ride in a taxi."

Driver: "You got nothing' on me, buddy; it's the first time I ever drove one!"

Last Call for the February Physiotherapeutic Meeting

Monday, February 8th, 1926

L. K. EASTMAN, M. D., Medical Director and Owner Keystone Hospital, Chicago, Illinois.

"Physiotherapy in the Treatment of Fractures"

10:00 to 11:00 A. M.

L. M. OTIS, M. D., Medical Superintendent, Otis Hospital, Celina, Ohio.

"Diathermy for the General Practitioner"

11:00 to 12:00 A. M.

EMILE C. DUVAL, M. D., Chicago, Illinois.

"The Treatment of Osteomyelitis by Diathermy"

1:30 to 2:30 P. M.

L. M. OTIS, M. D., Celina, Ohio.

"The Economic Value of Physiotherapy"

2:30 to 3:30 P. M.

An exceptionally interesting program has been arranged for this meeting, with a variety of subjects which embraces the general practitioner and the industrial surgeon. The talks will be of a practical nature, so that every visitor may take home with him information which will be of use in his daily practice. Following each speaker, there will be a brief general discussion in which all who wish may take part.

Interested Physicians and Surgeons are
Cordially Invited to Attend

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