Extraordinary Two-Day Program for the April Lecture Clinic

Signalizing the Opening of the New Fischer Administration Building

We are to be honored at this meeting with the presence of a most unusual gathering of leading exponents of Physiotherapy, who will give lectures, demonstrations and clinics on subjects of vital interest to the physician who is employing these methods. No pains will be spared to make this the most interesting and completely informative monthly meeting that has ever been held under the auspices of the Fischer Company.

Program for Tuesday, April 12th

GUSTAVUS M. BLECH, M. D., Chicago, Ill. "The Surgical Aspects of Diathermy." 10:00 to 11:00 A. M.

GUSTAV KOLISCHER, M. D., Chicago, Ill. "The Diathermy Knife in Surgery." 11:00 to 12 A. M.

CURRAN POPE, M. D., Louisville, Ky. "The Physical Treatment of Neural Syphilis; Demonstration of Methods." 1:30 to 2:30 P. M.

A. L. YOCOM, JR., M. D., Chariton, Iowa. "Electrocoagulation of Malignancies." 2:30 to 3:30 P. M.

FRANK H. WALKE, M. D., Shreveport, La. "Hemorrhoid Clinic." 3:30 to 4:30 P. M.

Program for Wednesday, April 13th

I. L. SHERRY, M. D., Chicago, Ill. "Ultra-Violet Irradiations in Some Diseases of Infancy and Childhood." 10:00 to 11:00 A. M

LEWIS W. BREMERMAN, M. D., Chicago, Ill. "A demonstration of Treatment of Bladder Tumors." 11:00 to 12:00 A. M.

CURRAN POPE, M. D., Louisville, Ky. "Prostato-Vesiculitis; Center for Focal Infection! Its Reflex Activity; Examination, Diagnosis and Treatment by Physical Methods. 1:30 to 2:30 P. M.

"Treatment of Peripheral Nerve Injuries with Physical Therapy." 2:30 to 3:30 P. M.

TONSIL CLINIC 3:30 to 4:30 P. M.

General Fellowship Gathering Tuesday Evening

After the day's work is over on Tuesday, April 12, there will be a general fellowship gathering to which all visitors are cordially invited. There will be brief addresses by three or four of the better known men, and general discussion of interest to all.

H. G. FISCHER & CO., Inc.

Physical Therapy Headquarters

2323-2337 Wabansia Avenue, Chicago

Phone Amitage 0323

FISCHER'S MAGAZINE

In This Issue

Diathermy in Gonorrhea

Abstracts of Current Literature on Physical Therapy

Announcement of Special April Lecture Clinic, see Back Cover Page

April, 1927

DON'T permit yourself to get too "set" in your ways; conditions are continually changing

Fischer's Magazine

Devoted to the advancement of the science of Electro-Physical therapy and to the interests of those earnest and enlightened medical men who are practicing it.

Vol. VI April, 1927 No. 4

Opening *of the* New Fischer Administration Building

Rapid expansion of the world-wide business of the Fischer Company has made necessary the addition of still another large building to the chain in which Fischer activities are conducted.

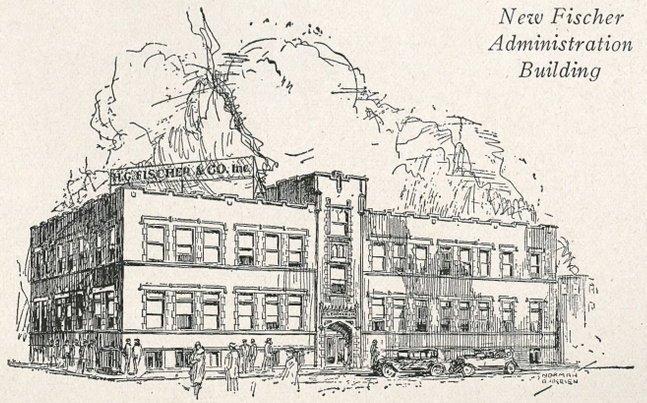
To meet the needs of our managerial and research departments and to provide adequate space for those researches by physicians interested in physical therapy which have proved so popular with the profession, a new office building has been erected.

This building, located at Claremont and Wabansia Avenues, directly opposite our main factory building in which the offices and demonstration rooms were formerly located, is now erected and completely furnished.

Physicians and their technicians are cordially invited to call at the new building, where our full research and technical facilities will be placed at their disposal. On appointment, arrangements will be made to give them the best possible instructions in physical therapy; and, if they desire, they will be conducted to various clinics, physicians' offices and hospitals in the city where physical therapy work is being done.

As we go to press with this issue of Fischer's Magazine, the final preparations are being made for the opening of this new Fischer Administration Building at the time of the extraordinary two-day lecture clinic, April 12 and 13, 1927.

The program of this meeting will be found in full on the back cover page of this magazine. Physicians interested in physical therapy are invited to be our guests at the April Lecture Clinic and to inspect the new building and make it their own for research purposes thereafter.



New Fischer Administration Building

Diathermy *in* Gonorrhea

In a recent article which appeared in the *Journal of the American Medical Association,* Corbus and O'Connor stated: "Before the introduction of modern methods of heat induction, the favorite method for attempting to destroy the gonococcus in the endocervical glands was the use of powerful bactericides and caustic protein coagulants, such as silver nitrate and iodine. For the most part all these remedies failed because they coagulated both tissue and bacteria, and, as a result of the coagulated tissue, the remedial agent was unable to penetrate to the level of the more deeply lying organisms that were responsible for the continuance of the infection."

The use of diathermy for gonococcal infections is based chiefly on the effects of heat on the gonococcus. Experiments performed during the past few years have yielded some interesting results.

Thus Corbus and O'Connor continue, "The safety of modern surgery rests on the known vulnerability of pathogenic organisms to heat. Unfortunately, the majority of bacterial cells are even more resistant to induced heat than a given normal body cell, and therefore cannot be destroyed in the living organism directly without attendant tissue extinction. This is not true of the gonococcus. One who is familiar with the management of gonorrhea in the male is frequently impressed with the number of "spontaneous cures" when an epididymitis or prostatitis has been accompanied for a number of hours with a temperature of from 102° to 103° F."

"Gonococci frequently disappear permanently from the urethra during respiratory infections, and the same thing has been noted during the pyrexia of typhoid. It has been demonstrated that the gonococcus is instantly destroyed at a temperature of 113° F. (45° C.) or at 104° F., (40° C.), prolonged for from six to eight hours."

"Since the normally nourished epithelial cell can survive a temperature of 118° F. (47.8° C.) for one hour, and connective tissue cells even higher temperatures for longer periods, the rationale of the therapeutic possibilities for destroying the gonococcus within the living tissue by heat is manifest."

Cumberbatch has found diathermy very effective and the best therapeutic results have been obtained where other methods have failed. He has employed diathermy for gonococcal infections for many years in his department at St. Bartholomew's Hospital, London. A recent article on this subject is introduced by Cumberbatch with this statement:

"The treatment of gonococcal infection by heat is a rational procedure because the organism can be destroyed at a temperature insufficient to damage the living tissues. This was known before the days of diathermy and attempts were made to cure anterior urethritis by introducing heated sounds into the infected channel, and to relieve

arthritis by directing currents of hot air on the inflamed joints. These methods were unsuccessful because the application of heat to the skin or mucous membrane does not raise the temperature of the parts which lie more than a trifling distance below the surface. In diathermy, however, the heat is not applied "ready-made" to the surface. It is actually produced in the tissues themselves, along the path taken by the current. If, then we are able to direct the current through the regions which are infected by the gonococcus and obtain a suitable temperature the organism will no longer be able to survive."

Arthritis

Diathermy has been found of valuable assistance in the relief of gonococcal arthritis. Cumberbatch relates in this connection, "The earliest experience, at St. Bartholomew's Hospital, was obtained in cases of gonococcal arthritis. At first diathermy was applied to the joints themselves, but we have since learned that it is necessary to apply the treatment to the primary foci from which the secondary infection is disseminated before the arthritis can be brought to an end. We have also learned that efficient application of diathermy to the primary foci, viz., the prostate and vesicles in the male and the cervix uteri in the female, will bring the arthritis to an end even if the joints are not included in the treatment. We have also found that gonococcal infection of the testis, epididymis and vas deferens can be brought to an end by applying diathermy to the prostate and vesicles only. So also the infection of the tubes and ovaries in the female can be brought to an end by applying diathermy to the cervix uteri only."

Action of Diathermy

Two main effects of diathermy on the gonococcus are recognized, i. e., the effect of regulated, deep-seated, localized heat on metabolism, and the specific action of heat on the gonococcus. These points are emphasized by all workers and on the assumption that such effects can be obtained, Corbus and O'Connor conclude, "Our problem being purely technical, the results will depend on:

1. A careful recognition of the indications and contraindications for the application of diathermy in specific infections.

2. The utilization of a machine that delivers the proper current.

3. An efficient method of conveying the heat radiation to the part involved.

4. A period of application sufficiently prolonged to satisfy practically the theoretical considerations.

Resistance of Gonococci to Certain Temperatures

Although a great deal of experimental work has been performed on the resistance of gonococci to certain temperatures, interesting and confirmatory reports are frequently reviewed in the literature. Recently, van Putte (Acta Dermato-Venereologica, Vol. vii, No. 2) conducted experimentation in a series of cases of gonorrhea with diathermy. Before starting the treatment he decided to establish the resistance of

the gonococcus to temperatures above 37° C.

The resistance of the organism to incubator heat and to the heat of diathermy were to be determined. The concensus of belief is that the gonococcus dies at 39° C. Wertheim contends that the organism will live at 40° C.

The work of Marcus and Santos-Boerner is quoted, giving the duration of viability for the gonococcus at various temperatures.

"The resistance to heat of gonococci in vitro is evidently much greater than it is generally supposed to be."

At 41.5° C, van Putte could still grow gonococci, and after six hours' heating at 45° C, a large majority of the strains were still viable.

The resistance of gonococci *in vitro* was as great for diathermy heat as for other forms of heat.

Conclusions

The practical application of diathermy for gonorrheal infections, both in the male and in the female is now thoroughly recognized as a valuable procedure. It is obviously impossible to detail technic in this short editorial, but for those interested, attention is directed to the many valuable articles and books which are of recent publication. These are replete with information for the experienced as well as for the beginner.

On the basis of experimental and clinical work done, no one now questions the rationale of diathermy in gonococcal infections. Its use is gradually being adopted by surgeons, urologists and practitioners everywhere.

Abstracts *of* Current Literature *on* Physical Therapy

A New Method of Dosage for Use in Actino Therapy

By Leonard A. Levy, M.A. (Cantab), D.Sc. (London), Etc.
British Journal of Radiology, September, 1926

The present great and continually increasing application of ultraviolet radiations to therapeutic purposes has created a demand for a convenient and reliable method of dosage measurement. The causes of variation of ultraviolet emission are first considered.

There are various methods available for the measurement of ultraviolet radiations, but not any of these conform satisfactorily with the requirements of actinotherapy. A method of dosage is proposed. This and other facts are brought out in the author's summary of results.

1. Pastilles made from chloralformamide and dyphenylamine are reactive to all ranges of ultraviolet radiation from 3800 to 2300 A. U. giving color changes, small increments of which are readily measured.

2. The pastilles are easily manipulated and enable an accurate and correct determination of the ultraviolet radiation to be made very readily. The reading obtained is additive, and is therefore independent of fluctuations in the ultraviolet emission during measurement. Such fluctuations always occur for the reasons already enumerated.

3. The pastilles are unaffected by exposure to diffused light, and do not alter in color for some hours after exposure.

4. Exposures made with the pastilles in conjunction with Vita glass, enable an idea to be obtained of the relative proportions of short and longer wave lengths in the radiation.

5. The use of the pastilles obviates the need of a timing clock.

In the course of their experiments the author prepared other pastilles, which are sensitive to other ranges of ultraviolet radiation, but the preparation put forward appears to be the most generally useful. Some of the preparations are more sensitive to the near ultraviolet, and the range of sensitivity does not extend nearly so far into the short wave region. The use of such pastilles in conjunction with those described, which record the total amount of the ultraviolet radiation, would also enable measurement of the proportion of various wave lengths to be arrived at. It appears, however, that the use of two different pastilles necessitating two different series of standard tints, was at this stage an unnecessary complication in view of the fact that approximately the same results may be obtained by use of the proposed pastilles and Vita glass.

Hemorrhoids

By J. Rawson Pennington, M.D.
Journal American Medical Association, Vol. 87, No. 25, December 18, 1926

After reviewing rather extensively this subject of hemorrhoids, Pennington considers the value of electrolysis and describes the technic. The lithotomy, the left lateral or the knee-chest position can be resorted to. As galvanization frequently sets up considerable pain, local anesthesia should be induced. For this 2 per cent procaine hydrochloride with epinephrine is employed. It is inadvisable to anesthetize the hemorrhoid also. A cam-

bric needle about 3 inches long is prepared by sticking both ends into corks for about one-fourth inch, then dropping the whole into shellac. When dried, the body of the needle, but not the ends, is insulated. The needle fits into a needle-holder and is attached to the positive pole for use. The negative pole is fastened to a large, moist pad which is then strapped to the body so as to keep good contact. This assures a steady current, thus preventing uncomfortable breaks. In from five to ten minutes, the anoscope is inserted and the hemorrhoids brought into view and swabbed with some antiseptic solution. The needle being introduced near the top of the mass, the insulated portion rests in the mucosa, leaving the noninsulated part in the pile tumor. The needle should not be passed into the base, as much pain may be caused. The current is then turned on carefully and slowly, using from ten to fifteen miliamperes until the mass is ashy or blanched. No particular change will be noticed until about the third day. A fresh needle should be used for each hemorrhoid. It seems to be immaterial whether all the masses are treated at the same time, or only one at each sitting. During the treatment, an assistant holds the anoscope so that the operator may guide the needle with one hand and control the current with the other.

Course in Physical Therapy

J. A. M. A., March, 1927

The Faculté de médecine of Brussels has organized a clinical course in physical therapy which is obligatory for students preparing for their doctorate. Professor Gunzburg, who is in charge of the course, began his clinical instruction with a comprehensive lecture on scapulohumeral periarthritis.

Uses of Ultraviolet Rays

Abstract of Discussion by Dr. J. C. Elsom

Iowa Radiological and Physiotherapy Society, Des Moines, Ia., November 11, 1926

In treating ulcers with ultraviolet, use caution as the new cells may be destroyed by over-raying. Do not increase the dose nor shorten the distance—two minutes at 32 inches.

Women should be irradiated as a routine procedure during pregnancy and lactation, beginning at the third month and giving the treatments from one to three times a week. This treatment is also of value in celiac disease and in pyelitis occurring in infants. In the vomiting of pregnancy a strong erythema should be induced over the area of the stomach, together with milder general irradiation.

The ultraviolet rays increase the red blood cells and also the total body content of calcium. In this connection it should be remembered that the *blood* calcium does not show the general body condition, as the cells may be depleted to furnish the quantity in the blood. Also, that in rickets there is a deficiency of phosphorous, as well as of lime.

The general tonic property of these rays should be utilized upon surgical patients prior to operation, particularly prostatectomy; in chronic bronchitis and severe coughs; and, in the general asthenia often seen in women at the menopause, especially when profuse uterine hemorrhages occur.

Do *not* use ultraviolet treatment in *active* cases of tuberculosis nor where there are abscesses of any description until these have been drained. In order to use this agency with safety and success, one must thoroughly know the indications, contraindications and dosage.

Surgical Tuberculosis Abroad

By Docteur A. Rollier

Archives of Physical Therapy, X-Ray, Radium, Vol. VII, No. 12, December, 1926

Of all the infectious diseases, tuberculosis is the one in which the notion of the "soil" plays the most important role. A rational therapy of surgical tuberculosis would abandon direct intervention, so often disappointing, and would seek first to stimulate the vital activity of the organism and give it the best possible opportunity for defending itself. It would seek its cures through the active co-operation of the patient, invoking the aid of the great healer, Nature. Any local treatment could be employed which did not interfere with the treatment of the general condition. Heliotherapy would seem to fulfill these three conditions; it can be practiced wherever the sun shines—a high altitude is probably the place of choice. The combined air cure and sun bath, particularly at a high altitude, sharpens the appetite, stimulates the digestive functions and re-establishes the general strength. The blood formula improves and the nutrition and general metabolism become more active. The favorable action of heliotherapy on the internal secretions should also be noted. Leysin, before becoming a heliotherapy center, was used for the treatment of cases of thyroid insufficiency. The effect of the sun is to be attributed to the synthesis of activity found in white light, and not to one or other of the isolated wave lengths, be it ultraviolet or infra red.

Wiesner's experiments have shown that the infra red wave lengths, particularly those nearest the red, which penetrate the organism, have bactericidal properties and are capable of influencing the deep lesions directly. Not only is heliotherapy the best general treatment of external tuberculosis, but it is without a rival as a local treatment. Combined with immobilization and extension, it rapidly decreases the pain in all forms of tuberculosis, arthritis and finally causes its disappearance. The same may be said of peritonitis and cystitis, with careful dosing. The solar rays cause also the cicatrization of sluggish chronic wounds, for which they form an ideal dressing, destroying the infectious germs, better than the best antiseptic and stimulating the cellular defense. Osteites and arthritis at every stage of their development belong to the province of heliotherapy. The experience of the author, controlled by the service of more than 15000 x-ray plates, proves that no lesion, however deeply situated, escapes the influence of the helio-alpine treatment.

In Pott's disease and other tubercular articulations, Rollier absolutely forbids the use of the closed plaster casts which deprive the parts most in need of contact with the sun and air, destroy the skin function, and increase the tendency to maceration of the integuments with atrophy of the muscles and bones. For Pott's disease, as for the arthritis of the lower limbs, immobilization in the horizontal position is an indispensable adjunct to heliotherapy. The thorax may be fixed by a canvas waistcoat, by opening which the whole front of the body is exposed to the sun. In Pott's disease, complicated by Gibbus, an endeavor to reduce the Gibbus is made, by applying a gradually increased pressure produced by the body weight alone. Cushions of millet seed or sand, of gradually increasing thickness and consistence are used. In hip joint disease immobilization of

the pelvis, raised on a cushion, is combined with continual extension of the limb, by means of an apparatus which permits of free access of the sun to the whole coxo-femoral region. In arthritis of the knee or foot, with heliotherapy is combined immobilization of the limb on an inclined plane to assist the circulation and thus induce more rapid regression of capsular thickening and periarticular infiltrations. Another advantage of this treatment is the protection of surgical tuberculosis against mixed infections.

Before exposure, all the organs should be carefully examined; the lungs and the heart in particular are submitted to a detailed examination, and special records should be taken of the pulse, the respiration and the blood pressure. The patient is exposed by gradual stages to the sun. Remember always that an early violent reaction is the sign of difficult adaptation to the sun. To regulate the gradual progress of each patient to complete insolation, his degree of tolerance of the sun must first be established. This is best done by commencing the sun cure on the legs and feet—one runs no risk and gets valuable hints for the general conduct of the cure. The exposures should last a few minutes and be separated by a rest interval. With sensitive patients, suffering from heart disease or simple tachycardia, the heart region should be covered with a white damp cloth; a white hat and smoked glasses are essential in order to protect the patient from stroke and sun-blindness. When the integuments are well pigmented over the whole body, the time of which varies for each individual, one need no longer be so cautious. The patient may take several hours' sunbath without danger. There is no need for glass screen of any kind in the sun cure.

Heliotherapy is not only the best local and general treatment for tuberculosis, but it is a precious psycho-therapeutic agent. The difference between the melancholy monotony of the sick room, to the perspective changing with the season, is doubtless sufficient to account for this psychic change. As soon as the patient is well on the road to recovery, the work cure is combined with heliotherapy; it is an important part of the treatment. The children follow the regular courses of instruction; the adults occupy their time with various kinds of handwork. This hand work even in the case of those suffering from surgical tuberculosis and necessarily mobilized, does not in the least endanger their cure. The renewed activity while excellent for the patient's morale, reflects on his physical state and thus favors the progress of his cure.

Surgical Tuberculosis at Home

By Horace La Grasso, M.D.

Archives of Physical Therapy, X-Ray, Radium, Vol. VII, No. 12, December, 1926

An extensive study of Rollier's work gave inspiration to the late J. H. Pryor, of Buffalo, to become the sponsor of heliotherapy. In a hospital, which the city had opened, for tuberculosis, in the Cattaraugus Hills, at Perrysburg, Pryor found a desirable locality for the new adventures. Sun cure was begun in a small group of patients in 1913. Since then, as the work has gradually progressed, capacity of the hospital has been increased to meet the growing demands. There is now space to accommodate 525 patients with provisions for extending the use of heliotherapy to the majority of pulmonary cases.

The author emphasizes the following points:

1. Tuberculosis, being a systemic disease as shown by present knowledge of its etiology, portal of entry and dissemination, must be treated by measures which affect the general system—and not the local manifestations.

2. Surgical measures are a drain upon the body vitality, thus tending towards a reactivation or aggravation of the disease, hence it cannot be looked upon with favor.

3. Operative procedure in an attempt to remove the localized disease area, tends to break down the wall of granulation and connective tissue, which is naturally the bulwark against disease, thus opening up new areas to infection and increasing the possibility of a generalized tuberculosis; meanwhile, the primary cause is untouched.

4. Operative procedure in joint tuberculosis favors ankylosis and thus destroys joint function, whereas heliotherapy favors its preservation or restoration.

5. Operative procedure is justified only (a) in those cases in which, in spite of heliotherapy and the resulting good general physical condition, the local lesion has not shown any satisfactory improvement; (b) to correct deformities developed during the course of treatment in spite of all efforts to prevent them; (c) to provide stability by an arthrodesis in a flail and useless articulation; (d) to evacuate abscesses, and this only by aspiration or a small incision when the pus is very thick; (e) in unilateral renal tuberculosis with marked destruction.

6. Solar radiation is a great muscle developer as seen in the perfect musculature of those cases who have been in bed for years, hence a very important factor in maintaining good positions and in preventing the development of deformity when the patient is up and about and convalescing. The long-continued use of casts for immobilization leads to the abolition of function through atrophic degeneration or specialized structures.

7. During the summer the irradiation period should be begun as early in the morning as the problem of hospital management will allow and if not completed at this time, it should be continued as late in the afternoon as the sun will permit, so as to avoid the most intense heat and thus reduce the possibility of complications; in cold seasons the sun exposure should be given at the middle of the day when the temperature of the air most nearly approaches the point of comfort, the utmost care being exercised to prevent cold breezes striking the body.

Zur Verstarkung der Rontgenwirkung Mittelst Intravenoser Dextroseinjektion

Nach E. G. Mayer, M.D., Professor Dr. G. Holzknecht

Acta Radiologica

This is a review, on the basis of observations by the author and others, of the effects of preliminary intravenous injection of dextrose—according to the method of E. G. Mayer, Vienna—on the sensibility of carcinoma to rontgen treatment. A much greater number of cases are benefited by the rays, a favorable effect rapidly ensues and a maximum result is quickly obtained. Other adjunct means that have so far been tried in order to increase the sensibility to treatment, have had no effect worth mentioning.

Treatment of Gonococcal Infections by Diathermy

By ELKIN P. CUMBERBATCH
American Journal Physical Therapy, February, 1927

After giving in some detail the method evolved by Dr. Robinson and the author, the effect of diathermy is discussed.

Gonococci which were previously found in spite of other forms of treatment, disappeared after diathermy and repeated search, at intervals, failed to find them. The examination of the cervix reveals nothing abnormal. On tapping it the fluid which emerges from the os is clear and glycerin-like in appearance. Symptoms, such as pain, irritation and discomfort on micturition, when present, disappear after diathermy. In our cases of prostatitis the discharge disappeared though, in some, a morning gleet persisted. Examination of the fluid obtained by massage of the prostate revealed no gonococci although, in two cases, a provocative injection of gonococcal vaccine was made. In two of our cases of gonococcal infection in women the patients married after the treatment and there was no transfer of infection, in one case after 5 years, in the other after nine months.

The evidence therefore favors the conclusion that the infection of the primary foci has been abolished, although it does not prove it. But we can say for certain that diathermy was able to render all evidence negative where other forms of treatment had failed.

Cumberbatch has also treated by diathermy a few cases in which the anterior urethra alone had been infected. In some of these the discharge soon disappeared; in others it disappeared but not more quickly than would probably have been the case if other methods had been used. We have tried four different methods of applying the diathermy; on two of these the anterior urethra was subjected to the treatment; in two the whole urethra was treated simultaneously. In neither of these methods have we used a bougie electrode for fear of spreading the infection. The bougie method is open to another objection. The distance between the active electrode (the bougie) and the distributing electrodes (which are placed on the back and front of the pelvis and on the perineum) is short in some parts and long in others. The current will therefore be concentrated in the shorter paths and the urethra will not be evenly heated. Attempts have recently been made in France to overcome this difficulty by introducing resistances in parallel between the electrodes with the object of making the paths between the active and distributing electrodes present the same resistance everywhere. This seems to me a task of no ordinary difficulty and I doubt whether an adequate application of diathermy to all parts of the urethra simultaneously, would at the same time, be an efficient application to the prostate and vesicles.

The paper is summed up by the following conclusions:

Our conclusions are the following:

1. The application of diathermy to the cervix or prostate and vesicles —the gates to metastasis—is a specific for gonococcal arthritis: early cases are cured, and late cases arrested.

2. Diathermy is a rapid and certain method of bringing gonococcal orchitis and epididymitis to an end.

3. The symptoms and (usually) the signs of gonococcal salpingitis can be removed by diathermy, if there is no pus or pent-up fluid in the tubes.

4. All evidence of gonococcal infection of the urethra and cervix uteri in women, and of the prostate and vesicles in men is negative after diathermy.

Diathermy in External New Growths Outside the Mucous Cavities

By RICHARD VALLACK, M.B., Ch.M.
American Journal of Physical Therapy, February, 1927

In deciding the method of operation upon any external neoplasm the main *desiderata* are: (1) certainty of eradication; (2) minimal destruction of adjacent healthy tissue; (3) minimal resultant scarring; (4) minimal hemorrhage; (5) minimal postoperative pain; (6) speed in operating; (7) minimal resultant shock.

These seven points are considered *seriatim*. The author is insistent upon the correct usage of diathermy. Surgeons must realize that a diathermy machine is not a glorified cautery. Cautery technique, applied to this work, will give neither the cures nor the aesthetic results that should follow. In point of fact diathermy improperly used, is not so efficient as a cautery well applied and will give the same indurated, contracted and often pigmented scar.

The various types of current are described. Electrodesiccation and electro-coagulation are detailed with special reference to the technic of operation.

It is legitimate to irradiate the field of operation with X-rays for therapeutic purposes when healing has been established. This is another great advantage that diathermy possesses over radium.

Ultraviolet Light as a Therapeutic Agent

By H. Harris Perlman, M.D., P.N.
The Therapeutic Gazette, November, 1926

Artificial light produced by the lamp is the nearest rival to sunlight. There is sufficient evidence based upon facts and not varied fancies, which when carefully weighed proves the value of this comparatively new treatment in many diseases. Actino-therapy deserves a proper place among recognized standard methods of restoring health.

This paper is comprehensive in scope and adequately covers the subject subdividing it under the following headings: solar and therapeutic spectra, varities of ultraviolet light, natural sunlight versus artificial heliotherapy, action of rays, generalized and localized treatment, methods for quartz light therapy.

A number of diseases treated included: chronic bronchitis, acute bronchitis, tuberculosis, simple cervical adenitis (non-tuberculous), rachitis, chronic constipation, secondary anemia, multiple arthritis, acne, furunculosis, alopecia areata, eczemarubrum, scleroderma, pernicious anemia, enlarged thymus, achondroplasia, burns, and miscellaneous conditions.

The results of the author's study is briefly conveyed in the author's summary and conclusions.

Two hundred and ten patients were studied by means of mercury-vapor quartz light. These patients were followed from the beginning to the end of the therapy, and included one hundred twenty-seven males, eighty-three females—61 infants, 127 children, and 22 adults.

The total number of improvements was 164, with 40 unimproved, and 6 in which the result was considered doubtful.

Exposures consisted of generalized or localized radiations or a combination of the two methods.

Because of a limited number of conditions treated at our clinic, it would seem unfair to evaluate and judge end results with any degree of certainty. Until corroborative data are forthcoming from independent sources, the much discussed drugless means of therapy should neither be unduly lauded nor hastily condemned.

From ous series of cases studied and reported instances of other investigators it seems, reasonable to conclude as follows:

1. Artificial heliotherapy may be considered a specific in rickets, spasmophilia, and tetany.

2. Mercury-vapor quartz light is of distinct value in chronic bronchitis of non-tuberculous origin.

3. It possesses a tonic effect in such generalized conditions as malnutrition and secondary anemia.

4. In localized entities it is employed with striking advantage in cervical adenitis, whether simple or tuberculous, chronic constipation, acne, burns, and enlarged thymus. In some forms of tuberculosis it is particularly useful.

5. Ultraviolet medication is not a panacea but a definite aid to the physician in many conditions where the administration of drugs is attended with difficulty. This is especially true during early life when the use of medicaments induces fright, provokes gastric disturbance, and gives rise to the common expression "the medicine is worse than the disease itself."

6. Lastly, artificial heliotherapy finds a useful place in many instances where drug therapy has taxed the patience of both physician and patient in having failed to accomplish noticeable improvement.

It is not surprising that a large variety of conditions lend themselves readily to this means of treatment. When one recalls the important rôle sunlight plays in metabolism and its necessity for general health, one can reasonably understand its value as a therapeutic agent.

No matter what attitude is assumed regarding quartz light therapy, the clinical fact remains that the majority of patients in our series of cases improved from the treatment. Actinotherapy is by no means the last word in modern therapeutics. Quartz light simply adds another instrument of precision in the hands of the physician when treating those ailments generally not benefited by ordinary means.

A Medical Carbon Arc Lamp on New Principles

By A. Stein, M.D.
British Journal of Radiology, November, 1926

The resumé given by Stein conveys in brief the text of his paper. It is therefore quoted:

"We have been dealing with a system of arc lamps for medical radiation, in which the carbons are placed in parallel series. The arc light is then formed between the two carbon points, which lie one above the other. This position of the carbons enables the light rays to stream out without any shadowing of the light-crater, which is more or less the case in every other form of carbon lamp. The Jupiter lamp is fitted with carbons of a special chemical composition. The result is that these lamps produce numerous ultraviolet rays down to 217 as well as notable proportions of infra-red and heat rays.

"The spectral values of the light produced by the arc approaches more nearly that of the natural solar rays than any other lamp made. The technical construction of the lamp is such that it may be attached to any wiring, any kind of current and any voltage. The manipulation of the lamp and the changing of the carbons is simplicity itself.

"So far four different sizes and types of these lamps have been placed on the market with from one to three pairs of carbons and ranging from six to sixty amperes current requirement. In the largest form of lamp the parallel position of the carbons is replaced by obtuse-angular arrangement for pure technical reasons.

"The cures effected by the use of these lamps are remarkable and important."

Diathermy: Its Scope in Medical Practice

By Franz Nagelschmidt, M.D.

Wisconsin Medical Journal, February, 1927

The great modern development of physics, chemistry and technical industry, has offered a tremendous variety of new and untried agencies of possible value in medicine. Medical science has been reluctant to study the application of various physical agents to the treatment of disease, and this reluctance is in danger of resulting in the development of all sorts of quackery in this field. It is wrong for scientific men to ignore the possibilities of development in this line and it is time for careful and critical study of the exact effects of certain physical agencies on living tissues. In the development of physiotherapy it is important that the specialist in this field be, in the first place, an excellent practitioner, and in addition, he must be an expert physicist and mechanic. It is important that training courses in physiotherapy be carefully organized. Any tendency for physiotherapy to degenerate into a testimonial affair must be discouraged. It is also important to emphasize the fact that physiotherapy is not a panacea; it has certain distinct uses, certain contraindications, and certain severe limitations.

Examples of physiotherapy of more or less well established types are the use of radium and x-rays in malignancy. There has lately developed the use of alpha-rays for the treatment of certain skin diseases. The development of ultraviolet therapy has become of great popular interest and is in danger of being abused. A certain sense of responsibility is felt in regard to ultraviolet therapy, and any efforts to promote its employment as a general panacea are to be severely condemned. It is remarkable that such a small part of the spectrum, viz.: that measuring about 3,000 angstrom units, is the portion of such great value. It has been shown to have a remarkable effect on calcium fixation, upon certain vitamines, and upon the vegetative nervous system. Its application to the skin results, if properly employed, in the stimulation of all the protective agencies elaborated by that great organ. Ultraviolet light does not penetrate deeply into the tissues and, as is well known, if too intense, may produce the death of the surface cells. The subsequent absorption of the products of decomposition from these dead surface cells may result in effects similar to those following the injection of a foreign protein. The infra-red rays at the opposite end of the spectrum penetrate more deeply than the ultraviolet rays, but, peculiarly enough, not as deeply as yellow rays.

Of great current interest is the matter of diathermy which may be defined as the application of high frequency currents for the purpose of inducing internal heat. This is an entirely different proposition from the external application of heat to the surface of the body. When ordinary low frequency or direct currents are applied to living tissue, there is an ionization in the tissue with a tendency to set up a flow of the ions toward the poles. This tendency is very slow. In the low frequency alternating current, the change in the direction of the flow may be sufficient to disrupt the cell, causing pain, discomfort, and all the other sensations following the ordinary application of an electrical current to the body. If the frequency of the alternating current is raised, the movement of the ions becomes progressively inhibited and, at about

10,000 alternations per second, is stopped. High frequency currents employ between 100,000 and 5,000,000 per second. This type of current was first applied to living tissue by D'Arsonval in 1901. After witnessing these preliminary trials, experiments were conducted on frogs with high frequency currents. With the electrodes applied to one arm and one leg, it was found that the skin gradually dried and that the muscular tissue between the electrodes became coagulated and cooked, but, peculiarly enough, on removing the electrodes, the frogs were still able to move and apparently could continue to live indefinitely. Further experimental studies indicated that the tissues of the body, exactly as the filaments in a lamp, offer resistance to the passage of the high frequency current, and that heat develops. There is no sensation of pain, there is no muscular contraction, but merely the gradual development of a diffused heat between the points at which the electrodes are applied. The direction of the high frequency current is determined by the position of the electrodes. There are no chemical changes in the tissue nor any untoward reactions unless the current is extreme in intensity and duration. There is usually a hyperemia in the tissue between the electrodes, which is of an arterial origin.

In practice a large indifferent electrode is usually applied to the back or abdomen and a smaller electrode is employed for concentrating the current and to secure proper direction. If this small electrode is edged and pointed in a manner similar to a knife, it may actually be used as a knife—"The radio knife" of newspaper reports. This knife acts by immediately coagulating and cooking the tissues with which it comes in contact.

The clinical applications of diathermy are very great. In the first place, by employing diathermic surgery, a bloodless operation may be made which is exceedingly valuable in removing carcinomatous tissue. It possesses a great advantage in inducing no hemorrhage, no pain, and in requiring no suturing. It also is advantageous because no blood vessels or lymph-channels are opened and there is thus no danger of inducing metastasis. The carcinomatous area is cooked, and surrounding this coagulated area is an area of hyperemia and increased metabolism which promotes healing and favors elimination. Clinical results with this technique have been very striking. Another important use of diathermy is in the treatment of lupus. Another interesting employment of diathermy is in connection with gonorrheal infections of the urethral tract. The gonococcus is apparently killed by a temperature slightly above the normal tissue temperatures, and sometimes very difficultly handled chronic infections of this type may be easily cleared up. The indications for diathermy are by no means the same as those for the external application of heat. Diathermy is contraindicated in internal congestion because its general effect is to produce an internal aseptic fever.

In conclusion, it is desired again to emphasize the proposition that the effects of physical agencies upon living tissue deserve careful study in medical circles. It is important that the limitations and dangers of the various forms of physical agencies employed in the treatment of disease be thoroughly understood. It is also important that no one assume to employ these agencies who does

not thoroughly know these dangers and limitations. The employment of ultraviolet light and diathermy has become increasingly significant within the last few years. Careful experimental work is necessary to elucidate all the factors involved in their clinical employment.

A Hospital Department of Physical Therapy

Abstract of an Address By Dr. Frank B. Granger

Twenty-third Conference of Medical Education and Hospitals, February 15, 1927

Every hospital of any size needs a completely equipped department of physical therapy, with a specially trained director of wide experience, employed and paid on a full-time basis, in charge and with an adequate number of trained technicians.

The equipment should include diathermy apparatus; air and water-cooled ultraviolet lamps; radiant heat-light and infrared lamps; galvanic apparatus and a static machine. The hydrotherapy outfit should have electric light cabinets; needle spray and Scotch douche installation; continuous immersion tubs and whirlpool baths. Arrangements should be made for massage, active and passive motion, supervised exercises and other forms of mechanotherapy.

The rooms for the department should be carefully planned with the needs of the hospital in mind. Toilets and dressing rooms should be so located as to save space and steps, and the whole layout so that patients may, so far as possible, be routed through.

If privacy for the patients is essential, small rooms or cubicles must be provided, but where it is possible to place a number of tables in one large room it is more economical of attendants, as one technician can easily take care of six patients, if he *stays on the job* to avoid accidents.

For a floor covering in these rooms, "insulite" is the most satisfactory and durable, though linoleum does very well. Rubber is slippery when wet; and natural or artificial stone is more or less so, as well as being hard on the feet of the attendants and likely to favor short-circuiting and electric shocks.

If alternating and direct currents are both wired in, the outlets should be so arranged that the plugs for the two types of currents are *not interchangeable*. This will keep a careless attendant from ruining an expensive machine.

Records should be kept by the *unit system* and patients should come in by appointment only, in such numbers and at such intervals as they can best be handled. Work should be done in the special rooms in the morning and in the hospital wards in the afternoon.

The training of physical therapy technicians is of the utmost importance. Persons who have graduated from a school of physical education and graduate nurses need twelve full months of training. Selected high-school graduates should be given twenty-four months of training, on the same basis as student nurses. For those who do not desire to exchange service for instruction, an intensive course, lasting eighteen months, might be provided, for which *they* would pay the institution giving the course. All nurses should be instructed in massage and in the rudiments of physical therapy.

An adequate physical therapy department is not only an enormous advantage to the hospital, but is an economic gain for the community. By expediting the recovery of the patients it increases the *effective* capacity of the hospital; and it returns to functional usefulness and productive work many who would otherwise become an economic burden because of incapacity.

Electrocoagulation of Tonsils

By M. A. Cohen, M.D.

American Journal Physical Therapy, February, 1927

The authors agree that the usual radical surgical methods are contraindicated. In such instances and in the presence of certain complications, it is believed that electrocoagulation of tonsils is a method deserving more attention from laryngologists and should be adopted as a routine wherever applicable to the best advantage of the patient.

After the usual pre-operative precautions and anesthesia, the following technic is employed. The D'Arsonval bi-polar high frequency current is preferable and the machine used should deliver a frequency of at least one-half to two million per second, thus getting a smooth and least irritating current. A plain, ordinary saturation metal bar is connected to one of the poles (it does not matter which pole) and held by the patient in both hands. This procedure also serves to keep hands occupied. To other pole we connect a flexible rubber insulated pointed wire electrode held in socket of a handle and used as the active electrode. Amount of current necessary varies with consistency of tonsils and amount of moisture, between 250 and 500 milliamperes; but best adjustable by past experience of operator. Ordinary wooden tongue depressor is most applicable being a non-conductor. At first treatment outer mid-section of tonsil is coagulated, inserting point of active electrode about one-sixteenth of an inch into tonsil tissue for about one second when tissue assumes color of ordinary tonsil tissue exudate. Current is always shut off before removing point from tonsil to prevent sparking in the mouth. Then point re-inserted into immediate proximate area until exudate produced covers about middle third of anterior surface of tonsil. Same procedure repeated on other tonsil. The foot switch enables the operator to work without assistance. Seldom one meets a bleeding spot, however, slight sparking arrests it immediately. Exudate so produced will begin to slough in about five days and clear surface will result in five to ten days when tonsil will have shrunk to two-thirds to one-half of its original size. Oftentimes slight temporary edema of surrounding tissue is noticed, but never becomes a troublesome factor.

During second treatment procedure is repeated, attacking entire anterior surface of tonsil; thus at time of third treatment we usually find an even smooth surface, but coagulate any irregularity present. Very seldom is it necessary to retract the anterior pillars, though we had to do it in one case using an insulated flexible flat piece of metal.

This procedure is not advocated as a routine in all tonsil cases; but it is effective and should be preferred wherever contraindications to usual surgical means prevail.

Correction

On page 73 of Fischer's Magazine for March, the milliamperage given in Dr. Breuer's article on "Uterine Replacement by Galvanism" should be "5 to 15 milliamperes" instead of "100 to 200."

Diathermic Treatment of Affections of the Stomach, Intestine and Bile Ducts

Page 83, "Die klinische Anwendung der Diathermie," von Dr. Iwan von Büben.

The effects of diathermy in stimulating the blood circulation and in relieving pain may be utilized in the treatment of diseases of the stomach and the intestine. The action of heat in alleviating pain in gastric neuroses; more particularly, in gastralgias and cardialgias, has long been known and applied. That the alleviation of pain by means of diathermy, in this field as well, is vastly superior to all previous methods of applying heat may be ascribed to its intense thermopenetration. In cardiospasm and pylorospasm of the stomach, the rapid improvement that usually follows diathermic treatment is likewise due to its capacity to relieve pain and subdue spasms.

Bordier and Nagelschmidt have reported on the curative effect of diathermy in disturbances of gastric secretion. Their examinations of the gastric secretion following diathermic treatment confirm unequivocally the subjective signs of improvement. Especially in achylia gastrica, an improvement follows diathermic treatment. As a result of the stimulation of the gastric secretion, the painful symptoms disappear, in many cases, after a few sittings.

Although I am willing to recognize and even to emphasize the favorable effects of diathermic treatment as applied to gastric neuroses, I do not regard diathermy as indicated in gastric ulcer. It is true that diathermic treatment in gastric ulcer will effect a slight alleviation of pain, but the intense, direct hyperemia is liable to cause a hemorrhage. Therefore, it is, in our opinion, fraught with danger to employ diathermy in this affection, just for the sake of alleviating the pain.

The same thing holds for diathermic treatment in duodenal ulcer, which, in the opinion of a few authors, ought likewise to respond to diathermy. In my opinion, the range of indications for every therapeutic method must be worked out and established with the greatest circumspection. There is nothing that will damage a genuinely good therapeutic method so much as to employ it in all cases without careful discrimination and to recommend it as a panacea. I shall doubtless find occasion to repeat this observation during the course of my presentations, for, in my opinion, the indications for diathermy, as is, moreover, commonly the case with regard to every new therapeutic method, have been extended too far, and often to fields in which the possible slight good effects are more than overbalanced by the damage caused.

In diathermic treatment of affections of the bile ducts, not only the alleviation of pain but also the resorbent effect and the production of hyperemia are significant and valuable. In the chronic types of cholangeitis and cholecystitis, and likewise in the peritoneal adhesions following the inflammatory process, diathermy will give good results.

Recently, the French authors Aimard and Rouzaud reported the favorable results secured by them in the application of diathermic treatment to the bile ducts in a series of 100 cases.

The Technic of Diathermic Treatment of Stomach and Bile Ducts

Thermopenetration of the stomach is accomplished by applying to that organ, the patient being recumbent, a small plate electrode and placing a larger electrode at the back. The smaller electrode the patient can adjust with the hand. In contradistinction to Bordier, who, in gastric affections, applies very intense heat for a considerable period, my view, in agreement with Kowarschik, is that the application of a moderate current suits the purpose better. The treatment, even with a moderate current, must not continue for more than from twenty to thirty minutes.

In thermopenetration of the bile ducts, a small electrode is applied over the liver, while the larger plate electrode is placed under the back of the patient, who is in a recumbent position. Here, as well, care must be taken not to apply even moderate currents for too long a period.

Treatment of Sterility With X-Rays

By I. C. Rubin, M.D.
American Journal of Obstetrics and Gynecology, July, 1926

Certain cases of sterility resist all ordinary methods intended for their relief, and therefore the suggestions made by Dr. Rubin should be helpful.

In twelve cases of sterility, associated with amenorrhea or oligomenorrhea, Dr. Rubin applied x-ray irradiations, together with tubal insufflation (in two cases), and endocrine therapy where indicated, following which nine of the women became pregnant. (Seventy-five per cent, compared with 5.5 per cent pregnancies in untreated cases.)

The doses of x-rays recommended by Borak and used by Rubin in various types of pelvic cases are: For amenorrhea, 5 to 10 per cent of the skin erythema dose; for oligomenorrhea, 10 to 15 per cent; for reducing too-free bleeding, 15 to 35 per cent; and for sterilization of the patient, 25 to 50 per cent of the erythema dose.

The twelve cases are reported in full and carefully analyzed, and the doctor sums up his results as follows:

1. Habitual amenorrhea is associated with sterility in about 5 per cent of cases.

2. Pregnancy takes place in about 5.5 per cent of the untreated cases.

3. In nine out of twelve cases treated with mild doses of x-ray, pregnancy resulted (*i. e.*, 75 per cent of the treated cases). Only one of these patients aborted. The rest carried to full term and gave birth to normal children. Among seven of the latter personally delivered there were six males and one female.

4. X-ray irradiation of the ovaries resulted in restoration of the menses in eleven out of twelve cases of amenorrhea.

5. X-ray irradiation of the hypophysis area and the thyroid appears to have an adjuvant value. Two of the pregnant cases and two of the nonpregnant cases received hypophyseal irradiation. One of the pregnant cases also received thyroid irradiation.

6. Peruterine tubal insufflation and endocrine therapy are additional aids to the therapeutic action of the x-rays in cases of amenorrhea associated with sterility.

7. As the ovaries were found to be definitely enlarged before treatment in eight of the nine successful cases treated with x-rays, careful examination with regard to this point may prove of aid in selecting the cases of amenorrhea associated with sterility suitable for ovarian stimulation. When no ovarian enlargement is found, irradiation to the hypophyseal area or the thyroid, etc., may be more advisable and should certainly precede irradiation of the ovaries.

Physical Measures in Acute Trauma

By M. A. Cohen, M.D.

American Journal of Surgery, Vol. I, No. 6 (New Series)

It is the usual belief that ordinary heat is seldom beneficial in acute inflammatory processes; but, if applied by hot air apparatus or the so-called deep therapy light from the tungsten lamp, the white penetrating heat, or diathermy, from the high frequency current to such a degree that it will not actually destroy the tissues, it will contract vessels as does cold, and thereby prevent more active inflammation. This agent will also stop accumulation of excessive exudate.

The already established stasis is to be overcome. When a part is too tender and painful to touch, even for light, soothing massage, static sparks, an agent which will painlessly contract all underlying tissues, wherever applied, or, if the area is suitable for application of a pad, the Morton wave current from the static machine which is still less irritating, will take the place of massage until acute symptoms subside. The above procedure, as also massage when properly applied by the trained masseur, will hasten absorption of stasis, be it blood or lymph, and strengthen local nervous control, thus improving nutrition. After this has been accomplished, a suitable bandage may slightly immobilize the part where, only after treatment, marked pain is still elicited on small degree of motion.

In one-sided injuries, of the back, pain rigidity, and atrophy, may be unilateral. These cases, under treatment which is necessarily over a long period of time, from one to six months, are usually benefited. Here we have the problem of overcoming the effects of time, contracture and atrophy, to slowly stretch contracted ligaments and muscles and to restore tonicity to soft structures. Results are usually obtained by applying penetrating heat for a long period (30 minutes to one hour) to get as complete relaxation as possible, followed by vibration or deep massage, to loosen up adhesions, then stretching and specialized exercise, which the patient is advised to continue at home. Sometimes, ionization with chlorine solution for softening of adhesions is necessary.

In traumatic neuresthenia or hysteria unless it be a case where a "lump settlement" is made, or the jury grants a verdict for the plaintiff, thereby curing him, physiotherapy, especially electrotherapy, is an indispensable agent in effecting a cure. Such cases arise usually soon after the immediate effects of the accident subside. The patients complain of tiring easily, of pains and aches about the area injured, interfering with or preventing work, sometimes of paresthesia, or numbness. Rigidity and tenderness may exist, but it is only skin deep. In these cases, if cure is to be effected it must be obtained quickly before the patient begins to doubt and to resist treatment.

Zinc Ionization in the Treatment of Chronic Purulent Otitis Media

By Hugh L. McLaurin, M.D.

Texas State Journal of Medicine, December, 1926

Cases in which there is a true tympanic origin are those which are amenable to zinc ionization. This process is accomplished by means of a very simple apparatus for the transmission of a galvanic current through a zinc sulphate solution, with which the ear has been filled, the positive pole being an electrode of zinc fitted into a rubber ear speculum, which is placed in the ear canal and dips into the zinc solution. The negative electrode is a piece of sheet copper which is attached to the arm by means of a dampened towel, the arm being protected from burning by several layers of the toweling. A direct or galvanic current, conveniently furnished by a radio "B" battery, may be used, the current being controlled by a well made rheostat and a milliammeter being placed in the circuit to determine the dosage.

The current must be turned on slowly and continued for at least ten minutes without unnecessary interruption.

Success with the method in chronic otorrhea is dependent upon several factors.

1. Its contraindicated use so far as favorable results are concerned in mastoid involvement, polypi or granulations in the tympanic cavity, or chronic tubal suppuration resulting from nasal or chronic tonsillar infections.

2. Proper cleansing of the ear of all foreign material.

3. Removal or correction of foci of infection in nose or throat.

4. A sufficiently large opening in the drum to insure getting the zinc solution into the middle ear and having it reach all of the infected area.

After ionization, one finds a white coating over the ear canal and the lining of the tympanic cavity. This is a sterile coagulum and serves as a protection to the tissues beneath. It should not be disturbed, as it is beneath this that the desired healing will occur. After three or four days the ear should be inspected. It may at this time be dry, or a watery discharge may be found. If discharge is present, a pledget of sterile cotton should be inserted in the outer canal.

Joint Mid-Year Meeting

American Electrotherapeutic Association and American College of Physical Therapy

Carlton Hotel, Washington, D. C. — May 16, 17, 1927

The American Electrotherapeutic Association and the American College of Physical Therapy, have made arrangements for a joint meeting on May 16 and 17, 1927, at the Hotel Carlton, Washington, D. C., immediately preceding the annual session of the American Medical Association.

There will be papers by scientists of national reputation, and demonstrations of practical phases of the application of physical therapy, by members of the association.

One afternoon will be devoted to a session at the U. S. Bureau of Standards with inspection of the laboratories devoted to X-ray, Ultra-violet and High Frequency Currents.

Another afternoon will be devoted to a clinical session at the Physical Therapy Department of the Walter Reed Hospital.

Programs can be obtained from either Richard Kovacs, M. D., 223 E. 68th Street, New York City, or A. R. Hollender, M. D., 30 N. Michigan Avenue, Chicago, or R. W. Fouts, M. D., Medical Arts Bldg., Omaha.

The First Reaction

By Louis A. Bolling, M.D.

International Journal of Medicine and Surgery, January, 1927

Bolling pleads for more conservatism in physical therapy, particularly its literature. The surgeon should be interested in the time-proven hydrotherapeutic measures, massage, and corrective exercise. They are sufficiently developed to hold a well-merited place.

Diathermy forms a distinct achievement and its possibilities have not yet been reached. Diathermy in pneumonia has been sufficiently tried and tested to need little further defense.

In bronchitis and whooping cough, diathermy over the bronchial tree, followed with the alpine light to the point of mild skin reaction, is serviceable and excels any medicinal agents, in the opinion of the writer. But, in the field of arthritis, especially chronic, degenerative types, and in neuritis our work is not so brilliant. One must be cautious in promises, but even here again our results are incomparably better than from other known methods. Ruling out the ever-present possibilities of toxemia from pent-up pus somewhere, the patient can generally be assured relief from distressing symptoms, often arresting the degenerative or inflammatory process.

The quartz lamps may be depended upon to stimulate superficial open areas, reduce sepsis to the minimum, and hasten cell proliferation and repair.

For a few treatments, body radiation acts as a general tonic, but the system quickly establishes pronounced immunity. In treating anemias with a check-up from the laboratory on the blood picture, no startling changes have been noted.

Other diseases such as hay fever, asthma, rickets and certain skin diseases, are influenced favorably, nevertheless, in the opinion of Bolling, all these benefits are vitiated by extravagant claims.

The same thoughts are expressed with reference to galvanism and the use of other types of lamps.

"The widest usefulness of physiotherapy is not as a group of agencies, self-sufficient in themselves to combat disease, but rather as a helpful supplement to the usual mode of treatment and management of the physician or surgeon. Recognized as such, it is meeting a hearty reception by profession and public, has found a place in the medical college curriculum, is installed in many large industrial plants and casualty companies, and no well-organized hospital today considers its service complete without it.

"It took five years or better to find out we did not possess a specific in the much-lauded 606. It would be passing strange if physiotherapy, with its several modalities, which have enjoyed unprecedented vogue these last five years, did not require as much or more time in elaborating, revising and standardizing to finally take its proper place among the newer medical sciences."

Physical Therapy in Arthritis

Abstract of a Lecture by Dr. J. C. Elsom

Iowa Radiological and Physiotherapy, Des Moines, Ia., November 11, 1926

There are two types of arthritis: proliferative and degenerative (or hypertrophic and atrophic). In both types, heat, applied by means of the infrared lamp, radiant heat-light or diathermy, relieves the pain and tends to cure by producing a hyperemia which flushes the blood and lymph vessels. The increased blood

supply also leads to increased oxidation; and, while there is no *known* relation between arthritis and defective elimination, the sweating produced may be of value in some cases.

Massage is also helpful in cases of arthritis, but has been much abused. The friction should be very gentle and used only for short periods. Gentle, local massage for five minutes is better than where more force and time are employed.

Diathermy will not absorb overgrowths of bone and cartilage, but it will *prevent* them if used sufficiently early. It also intensifies the action of any drugs which may be administered.

In applying diathermy the electrodes should be placed on opposite sides of the affected joint. If both knees and ankles are involved, run the current from one foot to the other, but *short circuit* it just above the knees if you want to see results. In multiple arthritis, use autocondensation. All types of diathermy treatment in these cases should be given *two or three times a day*.

Sun baths are frequently helpful in these cases—or one may use ultraviolet irradiations—for their general tonic effect. The carbon arc gives off a variety of rays of different wave lengths.

Rest is necessary in all acute cases; but in subacute and chronic cases mild and regular exercise is very beneficial.

The results from all forms of treatment are decidely irregular, so that the prognosis must be made carefully.

In all except acute cases the primary indications are for *heat* and *motion*.

A Method of Electrical Treatment for Enlarged Prostate

By F. W. Alexander, M.D.
The Lancet, January 22, 1927

In view of the results obtained by Morton's wave by tuning and regulating the current, the writer causes faradism to give an effect similar to Franklinism — Morton's wave. Be it remembered that in Morton's wave a spark which occurs at some distant part of the necessarily closed circuit causes a steady current of successive electrical impulses, blows or tugs.

Alexander uses a Smart-Bristow coil in which the current is derived from the secondary coil, and its strength is varied by sliding the iron core in or out of the primary coil. The secondary coil is so constructed (bound with somewhat coarse wire) as to produce painless muscular contractions; these contractions are governed by the switch—either one, two, three, or four divisions of the secondary winding — and the iron core or plunger, and they are tuned (the contractions) rhythmically by placing a metronome interrupter in circuit. The metronome is timed to synchronise with the heart beats. An ordinary zinc electrode is inserted in the rectum, but preferably one would use the rectal electrode designed by Dr. St. Aubyn Farrer; a broad, flat electrode is placed over the hypogastric region, but it can be applied anywhere on the abdomen. If there is any objection from the patient to inserting the electrode in the rectum, confidence can be given by the use of a small, flat electrode on the perineum.

The treatment is continued for ten to fifteen or twenty minutes. Great benefit has been obtained; micturition has become less painful not so frequent by day and night, and in a stronger stream; there is a feeling of lightness in the perineum and prostatism begins to disappear. This treatment has been applied to a hard prostate, but should expect an even better result with an enlarged soft vascular prostate.

A static machine with its working complements is costly to instal and for its current depends largely upon the weather. All the apparatus can be obtained for quite a modest sum. A word of warning is here necessary — galvanism must never be used; the metronome will only interrupt or reverse the direct current, but will not do away with its chemical or electrolytic action. This can be proved by means of pole-testing paper. It is also unwise to use a faradic current attached to a galvano-faradic battery, as sometimes there is a leakage of direct current. The Smart-Bristow battery should be used instead. Faradism cannot produce electrolysis but the ordinary faradic apparatus has usually fine windings which cause painful tetanic muscular contractions. It should always be ascertained that terminals and switches are properly adjusted so as to ensure a smooth and even current.

Ultraviolet in Physiological Chemistry

The new (ninth) edition of Hawk and Bergeim's "Practical Physiological Chemistry" contains a new section dealing with ultraviolet radiation, in which full directions are given for performing several experiments with this agency, and the subject is briefly but clearly discussed. The physiologic effects of ultraviolet energy are mentioned in a number of chapters throughout the book in a manner which shows that the authors are keeping in touch with modern developments.

Notes from the Iowa State Radiological and Physiotherapy Society Meeting

Chronic Suppurative Otitis Media

In cases of otorrhea, exclude or treat tuberculosis and syphilis first. Clear up adenoids before attempting ionization. Only cases of simple otorrhea are suitable for ionization treatment.—*Dr. A. R. Hollender,* of Chicago.

Diathermy in Sinusitis

In cases of subacute or chronic sinus disease adequate drainage should first be secured.

For using *indirect diathermy,* seat the patient on an autocondensation pad attached to one of the d'Arsonval terminals and strap the other terminal to your own hand, applying the fingers of that hand over the nose and sinuses.—*Dr. J. C. Elsom,* of Madison, Wis.

Autocondensation in Insomnia

Put your sleepless patient to bed on an autocondensation pad connected to the diathermy machine and turn on the current. When he is asleep, turn it off.—*Dr. Charles E. Stewart,* of Battle Creek, Mich.

Ultraviolet Rays in Acne

In treating acne, use the water-cooled ultraviolet rays first, giving a massive dose—to full second-degree erythema. Follow this with general irradiation with the air-cooled lamp. —*Dr. Lynn B. Green,* of Kansas City, Mo.

Tanning and Ultraviolet

Those patients who pigment freely get the most benefit from ultraviolet rays; and this value depends upon the endocrine status of the individual. Thyroid types burn; adrenal types tan.—*Dr. J. C. Elsom,* of Madison, Wis.

Radiotherapy in Uterine Carcinoma

Radium and x-rays should be used only in inoperable cases of uterine carcinoma. Apply the treatment in five doses with three or four days between them. Do *not* operate on cervical cancer after using radium or x-rays.—*Dr. Henry Schmitz,* of Chicago.

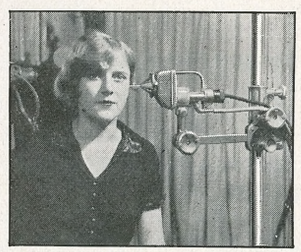
Carcinoma of the Bladder

Carcinoma of the bladder should never be touched with a knife. Surgical diathermy is ideal for localized cases. For advanced cases, use x-rays, but *not* radium.—*Dr. Henry Schmitz,* of Chicago.

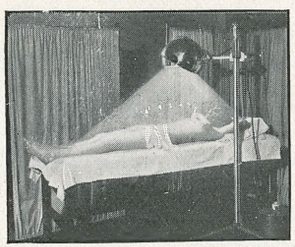
Quinine and Ultraviolet

Quinine sensitizes the body to ultraviolet irradiations, and if a patient who is taking quinine is given the same dose that other people receive safely he will almost surely be severely burned. It is well to inquire as to this point before giving ultraviolet treatments.—*Dr. J. C. Elsom,* of Madison, Wis.

To Keep Abreast of Modern Practice and Technic The Physician Should Advance With It



Quartz Light to the Ear



General Ultra-Violet Raying

WILL you permit us to present you with a file of important papers on the subject of QUARTZ LIGHT THERAPY?

Much of the work done in Quartz Light Therapy has been ably presented by responsible members of the profession. Reprints of these papers show most interestingly the remarkable advances which have been made.

In line with FISCHER ideals, we offer the ALPINE SUN AND KROMAYER LAMPS.

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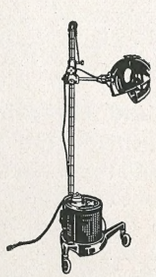
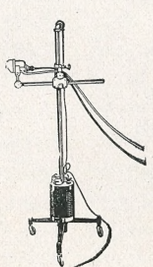
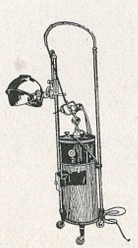
Physical Therapy Headquarters



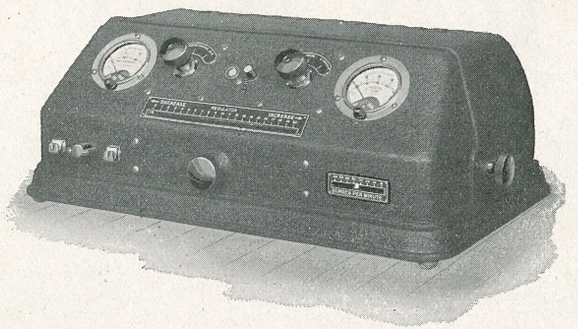
Alpine Sun Lamp



Kromayer Lamp



Combination Unit



The Fischer Perfected Low Voltage Generator

Physicians report it as generating the smoothest currents ever employed by them

After months of exhaustive trials and actual use by physicians out in the field, we are happy to announce a full confirmation of every fact demonstrated in our laboratory tests. The new Fischer Low Voltage Generator is amply powerful, remarkably smooth and supremely versatile. It generates these 9 distinctly different types of currents:

Straight Galvanic — **Wave Galvanic**
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Straight Combination — **Wave Combination**
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Physicians greatly appreciate its almost noiseless operation, its compact and substantial construction, the amazing smoothness with which it delivers all currents; the extremely rapid pulsations of the alternating discharge, and the true straight line galvanic effect.

A pamphlet has been prepared describing the construction and operation of this exceptionally efficient outfit. Interested physicians may have a copy upon request.

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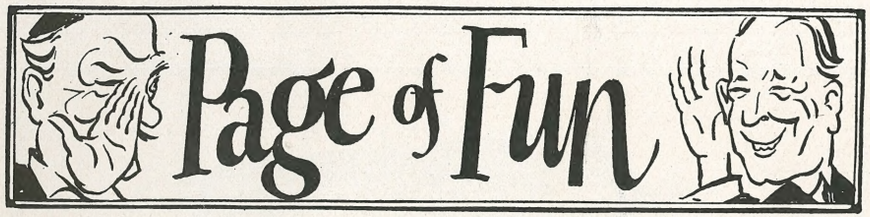

MISTRESS: "Goodness, Mary, where is the telephone?"

MARY: "Mrs. Brown called across the fence asking if she could use it, so I sent it across, but I had an awful job to get it off the wall."

Two colored boys who had just stolen a sack of chickens were running down the road.

"See here, Harry, what foh you figah out all dese heah flies are a followerin' us like dey is?"

"Dem ain't flies, black boy, dem's buck shot."

MOTORCYCLE POLICEMAN: You were going 45 miles an hour. I'll have to pinch you.

SWEET YOUNG MOTORIST: Oh, if you must, sir, do it where it won't show.

PLUMBER: I've come to fix that old tub in the kitchen.

YOUNGSTER: Mamma, here's the doctor to see the cook.

TEACHER (in English class): Jackie, take this sentence: "Lead the cow to the pasture," What mood?

JACKIE: The cow, ma'am.

The owner of a big plant, addressing a new employee:

"Did my foreman tell you what you will have to do?"

"Yes, sir, he told me to wake him up when I see you coming."

DOCTOR: "Well, my good man, have you any temperature this morning?"

PATIENT: "No, the nurse took it."

"Did you take your father apart and speak to him?"

"No, but he went all to pieces when I told him."

"A moth leads an awful life."

"How come?"

"He has to spend the summer in a fur coat and the winter in a bathing suit."

CUSTOMER: "Have you the same razor you used on me yesterday?"

BARBER: "Yes, sir, the same identical one."

CUSTOMER: "Then give me gas."

"I tell you," said Pat, "the old friends are the best, after all, and I can prove it."

"How?"

"Where can you find a new friend that has stood by you as long as the old ones have?"

Sire, Lady Godiva rides without.

Sire (after glancing without): "Very tactfully put, my man."

HUSBAND (arriving home late): "Can't you guess where I've been?"

WIFE: "I can; but go ahead and tell your story, anyway."

Harassed looking person to license clerk—"Are you sure that was a marriage license you gave me last month?"

"Certainly. Why?"

"Because I've lived a dog's life ever since."

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