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## The National Eclectic Medical Association Quarterly March, 1928 Volume 19, Number 3

## **Selected Articles and Editorials**

### **DIATHERMY IN PELVIC DISEASES.**

#### E. F. SHAULIS, M.D., INDIANA, PA.

To many this title may seem a diversion from Eclecticism, but I hope to convince you that it is truly and thoroughly Eclectic because of its specific application and remarkable results.

Diathermy as a science means nothing more than the use of one modality of electricity. It means heating through and through and not on the surface. In other words, the heat is caused in the deeper tissues by the resistance they offer to the high frequency current, the same as the element in an electric heater. But here we are dealing with living vascular tissues, and they act in a certain definite way. It produces a local vaso-dilatation of the arterioles, capillaries and veins, and a similar effect on the lymph-channels. More blood and lymph flow through a given place in a unit of time than in normal condition. This means, then, we are producing a temporary congestion of the parts because we increase the blood supply to and from the parts we heat. The vessels dilate and attract the blood supply. If we increase the blood supply we have more working power. We, therefore, have more train-loads to carry into our pathological area, more blood with all its equipment to tear down any pathological condition and restore the part to normalcy, barring none save malignant conditions. We then have rushed into this heated area our standing army to fight infection. We have an increased circulation of the blood and lymph-stream, and in order to be cooled off with its cargo it must go to other parts of the body, as it were, and unload the debris or toxins through the organs of excretion. If we increase the blood supply under the most abnormal condition we have more power to restore tissues to normalcy.

We have rivers of red corpuscles and phagocytes to form a line of

defense around the pathological area. The battlefield will be more favorable because of the heat and increased blood, just in proportion as will a bright sunnv day be the victor of a well-equipped army in a jungled wilderness.

Why all this with electricity? Heat first, then with a question mark we want to add a sterilizing-or germicidal effect. We know that we kill gonococci at about 114 degrees Fahrenheit. We know that a number of other infections or cocci are destroyed at a temperature of 124 degrees Fahrenheit. Whether or not we can raise the tissue to this degree of heat without some injurious effect is doubtful. We can, however, approach it. Diathermy machines will actually procure that degree of heat, but let us be careful in treating living tissue.

Some teachers will say that penned-up pus and hemorrhage are two contra-indications for the use of diathermy. It is with penned-up pus and the use of diathermy as it is with the use of a poultice and the lance. You use the lance with the poultice. Why not use the lance with diathermy so soon as your clinical symptoms and laboratory findings tell you there is penned-up pus? Get drainage and go ahead with diathermy. It is a specific. I have used it successfully in about every form of infection one might apprehend in a large general practice. (I am, however, cautious in sinus infection and rheumatism, arthritis deformans and hemorrhage.)

This paper would have been incomplete had I not given my reasons for the general application of diathermy, but we must proceed to its application to some of the more common diseases of the female pelvis. Do not get the idea as we go along that I depend on diathermy alone, but I use my specific medicines as indicated, though I shall not mention them or parallel them as we apply diathermy. Diathermy is a most valuable adjunct to these pelvic conditions. It is a specific, and its results are as marvelous, and maybe more so, than are specific medicines. Given, then, a diathermy machine with the smoothest and most velvety current and the frequency up to about 1,500,000 to 3,000,000 per second, we are ready to apply our modality in one of two ways. The one I use most commonly is the d'Arsonval, with an active electrode and an indifferent or inactive electrode. The active one is some type of vaginal electrode, depending on the condition I want to treat, or it may be block tin of varying size placed over the area I want to treat. For the inactive or indifferent electrode I use usually a sheet of block tin four by eight or

eight by ten, and I want it light weight and very flexible. I like the girdle or belt hook-up for the inactive in cases where the uterus and its adnexa alone is the part in question. By girdle hook-up we mean a piece of block tin or other material made up into a girdle and applied around the waist just above the ilii. This is a very good method for specific application to the uterus, ovaries and tubes, but frequently for general treatment to these parts I use one electrode from four by six to eight by ten inches square on the back for the inactive, and for the. active electrode I round one side of the same size pubes for toward and I place it on the lower abdomen close to the pubes. But if you have a congested subinvoluted uterus or any like condition with bladder and urethral irritation, there is no hook-up quite so good as a piece of block tin about six inches square, with one side rounded to fit up close to the pubes, and plaice a flat sand bag over it or a large rubber sponge held in position with a Turkish towel. Now place a vaginal non-vacuum electrode, or at least an electrode that would get your high frequency from the urethral meatus up through the urethra, the bladder, and the body of uterus, to your inactive electrode and be careful about the dosage. By using good judgment this will give you a wide range of treatment for practically all pelvic conditions, and will relieve many cases of amenorrhea, dysmenorrhea, gonorrhea, leucorrhea, endocervicitis, endometritis, salpingitis and ovaritis. In many idiopathic conditions and certain states of psychic neuroses great benefit is to be looked for. This is also true in ovarian dysfunctional conditions. Light fulguration to an ulcerated cervix will bring good results. But usually, however, the active electrode especially the Chapman type, will produce enough heat to stimulate the healing process without fulguration. Given a case with a non-vacuum electrode or a Chapman electrode in vagina and a piece of block tin six inches square, with one side rounded off, I use from 500 milliamperes to start with for five minutes and 1,000 to 1,200 milliamperes for fifteen to twenty minutes and reduce to 500 milliamperes for the last five minutes, or a total of about thirty minutes.

If I use an anterior and posterior pad, say six by eight inches square, I use 1,000 milliamperes for the first five minutes and 1,500 to 2,000 milliamperes for the next twenty minutes and reduce to 1,000 for the last five minutes. Bear in mind the size of the active electrode in the vagina, and keep below the coagulation dose, because you cannot compare the square inches of surface of our inactive electrode on the back with that if the vaginal. Why? Because you are not using all the surface of the vaginal electrode on account of the current following the

shortest path to the inactive electrode. It would require some close figuring to show the ratio between the round electrode and the square one, and, therefore, use good judgment. I like the use of the girdle for most of this work for the uterine condition, because the course of electricity is so well directed into the right area. One must now begin to use your judgment to direct your current to produce the heat just where you want it. Another hook-up for vulvitis would be to place a girdle around the pelvis or a plate on the abdomen and with a sponge press very thin sheet lead or mesh, thickly covered with K. Y. lubricant, tightly against the vulva, and your current will travel in about the right direction.

I usually use well-insulated cords for this treatment. You need not worry about a positive or a negative. There is really none. You need not worry about the active or the inactive, because they are simply designated as such from the fact that you arrange the size and shape a little more definitely to try to get greater condensation nearer to where you want your heat, and it is called the active. In my own mind when the electrodes are of equal size there is no confusing active and inactive electrodes.

Some one is ready to ask about the number and frequency of the treatments. I give a treatment every second day for from three to four weeks, and depend on what the patient tells me from that time on, but do not allow myself to be persuaded to give up the treatments until the pathological condition is restored to normal if they are responding to the treatment.

I am going to tell you something here I never heard discussed. I frequently used to use the unipolar method, taking the cord from the Tesla outlet and attaching it to the vaginal electrode. Frequently the patient would, on her return, tell me she did not sleep any the night after her last treatment. This electrified my patient and their minds were exhilarated and they would not quit thinking. I tried the d'Arsonval current with the bipolar method on the same patient and found it did not give them the mental exhilaration because it did not electrify the whole body as did the one pole from the Tesla outlet. This is well worth remembering.

I want to say that with ten years of experience in this work I am most highly pleased with the use of diathermy. In conjunction with this, however. I use a pesserole I have made and pack the vagina with wool tampons saturated with one of a number of boro-glycerole preparations immediately following each electric treatment.

A patient comes to us for consultation disgusted with herself and her condition, unhappy, probably, because she imagines no one cared for her or everyone in the household and community is doing mean things to her. These conditions are nearly always sequelas of the pathological condition. Now in the course of two months your picture is changed, face brightened and tension relieved, and a new and happy relaxation exists. Your pathological condition always is changed.

## ARTERIOSCLEROSIS.

## PAUL A. DEOGNY, M.D., MILFORD, NEB.

The frequency of arterial disease, the widespread changes which it produces in other organs, and the serious complications that so often supervene in the course of such disease, make the subject one of unusual importance to every practitioner. There is such a diversity of opinion among recent writers on arteriosclerosis relative to the etiology, the pathogenesis and symptomatology that it makes a study of this disease more than confusing. Our difficulty will be lessened if we get a conception of arteriosclerosis as a condition, not the result of a single causative factor, but as one with a multiple variety of causes, a varied pathology, depending on the size of the vessels involved, and with a variety of clinical symptoms in different individuals and in the same person at different times.

*Etiology.*—Arteriosclerosis attacks all ages. Fremont-Smith, in an excellent paper, collected 144 cases of juvenile arteriosclerosis. We can assume that arterial changes take place in all individuals after thirty-five years of age. Heredity, improper and indiscreet eating and drinking, excessive social activities, the worry and nervous tension of modern business, and prolonged muscular exertion, determine how rapidly these changes will progress. For these reasons men are more subject to arteriosclerosis than women, Americans more than Europeans. Warfield states that arteriosclerosis is more frequent and of earlier onset in the American negro than in the white race, attributed largely to the prevalence of syphilis and hard manual labor in that race. Jews are

especially prone to senile sclerosis. Among the other causes may be mentioned excessive adrenal activity, intoxications as occur in chronic nephritis, gout, diabetes, obesity, and acute infectious diseases. Pierson claims that high blood pressure is far and away the most important cause of arteriosclerosis, especially of middle life. Persistent high blood pressure results from two main causes: (1) Chronic renal disease; (2) primary disturbance of the vessels themselves, probably a result of arteriolar spasm. This latter condition is known as essential hypertension, and is a persistent elevation of systolic and diastolic blood pressures for which there is no discoverable cause. It must be clearly understood that high arterial tension and arteriosclerosis are not synonymous. They can and do exist frequently entirely independent of each other. It is the belief of some that arteriosclerosis is the cause of hypertension. but it is not supported by clinical or experimental observations. For instance, how explain the great senile group of arteriosclerotics with rigid pipe-stem vessels and normal or sub-normal blood pressures? All available evidence seems to indicate that the converse is true, and that at least certain forms of arteriosclerosis are the result of persistent high blood pressure.

*Morbid Anatomy*.—Four varieties of arteriosclerosis may be recognized— the nodular, the senile, the diffuse, and the syphilitic.

The nodular form: This affects chiefly the aorta and larger arteries. In early stages opaque gelatinous plaques present on the inner surface of the vessel walls, later becoming cartilaginous. When old they become calcined and brittle or degenerate by necrosis. Thrombi and the so-called "atheromatous ulcer" result.

The senile form: This may affect any part of the arterial tree, but, as a rule, it affects the radial and other middle-sized arteries. The vessel walls become thinned, distended, tortuous and rigid. Microscopically, the muscle cells and elastic fibers of the media show fatty degeneration, atrophy, fibrosis and calcification. The connective tissue and elastic fibers of the intima show hyperplasia and fatty degeneration.

The diffuse form: This corresponds to the arterio-capillary fibrosis of Gull and Sutton. It is observed most frequently in association with chronic nephritis and essential hypertension. Affects especially the smaller vessels, causing thickening of their walls and contraction of their lumina. Microscopically, resembles the senile form with the hyperplasia predominating.

The syphilitic form: Affects any arteries, although it has a strong predilection for the ascending aorta and arch. Opaque, nodular, gummatous swellings line the vessels. These undergo cicatrization and form depressed radiating scars, in contrast to the atheromatous and calcareous changes in the nodular form.

Associations and Sequels.—Chronic nephritis is frequently associated with arteriosclerosis. Hypertrophy of the heart is constantly present in the diffuse form. Hemorrhage is one of the most serious consequences, cerebral and retinal being most frequent. Aortic aneurysm, in the majority of cases, is the result of syphilitic mesarteritis. Thrombi and emboli are found in the nodular form. The most frequent sequels are cirrhosis of the viscera, softening of the brain, and gangrene of the extremities.

*Symptoms*.—The early symptoms are a gradual deterioration of the general health, pallor or tissue-paper skin, prickling and numbness of the fingers, pulse with a distinct interval between beats, and "intermittent limp," as described by Mackenzie.

The symptoms vary, depending on the type, degree and localization of the disease. When the arteries of the brain are affected we get symptoms of diminished blood supply, as giddiness, especially when standing up quickly from a lying position or on violent exertion; loss of memory, particularly for recent events; sleeplessness, headache, tinnitus aurium and mental irritability or depression. The changes in the coronary arteries lead to a diminished supply of blood to the heart muscle, and their presence calls forth symptoms of distress, dyspnea and pain.

*Treatment.*—The treatment of arteriosclerosis must of necessity in some cases be general, and in others directed to the organs involved. Early treatment is quite successful, but no treatment has been much more than palliative in the fully-developed cases of arteriosclerosis. Excesses, as mentioned in the etiology, must be avoided. Bowel regulation is essential.

The diet should be largely vegetable, but the big thing is to always avoid over-loading. The question of rest and exercise is one of importance. Walking in the open air, deep breathing and eight or nine hours' sleep are necessary. Such organs as the heart, brain and legs are accustomed to be exercised to the limit of their endurance. Enough quiet must be enforced to avoid over-exertion of these organs. Baths should be warm, at night, and never cold. Focal infections in the teeth, tonsils, sinuses, ears, gall-bladder, appendix, genito-urinary tract and lower bowel must be removed, as also chronic -intoxications by alcohol, lead and intestinal stasis. Anti-syphilitic remedies, when indicated, have been disappointing. Remedies that I have proven useful are veratrum, kali phos., baryta mur., sodium nitrite, calcium iodide (salol coated) and sumbul.

Ergot in threatened gangrene of the extremities is a very superior remedy. Body infra-red, followed by auto-condensation, have given considerable relief. Courses of baths at the various springs have been helpful. Animasa, used in thirty-eight cases satisfactorily by Witt, of New York, reduced blood pressure in all cases, regardless of its origin. Animasa abounds in protein substances, and is an organic preparation from the intima and media of young cattle, fetal extract and by-products of erythrocytes.

The following types of hypertension respond to treatment:

Nephritic type: If treated early, this type may be considerably relieved by sigmoid treatments, diathermy to the kidneys and cat. phos. and kali mur. internally.

Adrenal type: Pancreas substance, crataegus or digitalis internally. Xray treatment to the side of the vertebrae between the eleventh dorsal and upper margin of third lumbar. Failing myocardium type is best treated by diathermy to the heart as recommended by Nagleschmidt. Body ultra-violet radiations. Digitalis, macrotys, crataegus, cal. fluor. and iron internally as indicated.

Liver type: Diathermy to the liver, auto-condensation. Liver substance internally. Results will be had with chelidonium or chionanthus, as indicated.

Climacteric type: Ultra-violet locally with general body radiations. Pancreas substance, with veratrum, macrotys and belladonna, are most often indicated.

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## THE MEDICAL SERVICE IN THE ARMY.

## F. L. HOSMAN, M.D., INDIANAPOLIS, IND

The medical service in the army is divided into four sections, viz., (1) medical, (2) dental, (3) veterinary, (4) sanitary. We will take up the medical service as covered by the medical officer only. This section is divided into the surgical service and the medical service, each having its own or separate section, except in isolated posts where there are only a few men stationed. At these stations the medical officer on duty covers the medical, surgical veterinary and sanitary departments as best he can.

The surgical section, of course, relates to the surgical service; the medical section attends to the medical cases only. These two sections operate in large posts and general hospitals, such as the Walter Ried (Washington, D. C.), Fitzsimmons (Denver. Colo.), Letterman (San Francisco, Cal), and in such posts as Ft. Benjamin Harrison. Ind. etc. The medical department is divided into many sections, each having its own head or chief of the service—for instance, the chemical warfare, aviation medicine, neuro-phychiatric, laboratory, etc.—all of which are controlled through the Surgeon-General's office, where representatives of each service are on duty to assist him in covering the department as a whole, thus keeping in touch with each branch and knowing what each is doing along their particular line. One who is not familiar with the situation has no idea how comprehensive is the work of the medical department in the service of the army, and the number of men to keep it going.

We will diverge somewhat and give a slight history of the service. Beginning with the Revolutionary War, we find that the medical department was originated in Boston in 1775, when the physicians were called from the bedside to care for the troops. Dr. Warren, of Boston, one of the first to be called, lost his life a few days later. Dr. Benj. Church was the first head, but was soon discharged for treason and was replaced by Dr. John Morgan, of Philadelphia, who was followed by Dr. Wm. Shippen in 1777. At this time, even as it is in our present day, jealousy and radical differences created a lack of co-operation between the various medical officers with regiments and the hospital service. In 1784 the department was disbanded. In 1812, with war at hand, Congress prescribed the number of physicians and surgeons for the various troops assembled, with Dr. James Tilton, of Delaware, as its head. Dr. Tilton did not recognize the difference between the practice of medicine and surgery, and preferred the sick and wounded to be cared for by the regimental medical officers in their own regimental hospitals instead of separating or classifying them.

The first Surgeon-General was Dr. Joseph Lovell, who was appointed May 14, 1818. From this time on the medical department became of great service, and a number of brilliant men have been at its head. Dr. Jonathan Letterman, during the Civil War, instituted the system of ambulance evacuation; also field and regimental hospitals, which were the first of their kind in the army. It was General Sternberg who inaugurated the system of female nurse corps in 1899. To his credit is due the tubercular hospital and camp at Ft. Bayard, N. M., in 1909. He is also the originator of the plan of the Walter Reid Hospital in Washington, D. C., which is at this time the great medical center of the army. We also find General Gorgas, who made it possible to build the Panama Canal by his wonderful system of hygiene and sanitation. It was he that discovered that it was the mosquito which caused the yellow fever and developed the means for its destruction, thus making the Canal Zone a fit place to live.

Our present Surgeon-General, General Ireland, is an Indiana man, who became famous as the Chief Surgeon of the A. E. F. during the World War. General Ireland saw the defects in our medical service during the conflict, and when he became the head of the department at the close of the war he at once began to make changes, and today the medical department is considered as among the best in the world. Attached to every division is a medical regiment, consisting of a headquarters, with regular and attached officers numbering 14; a service company, 4 officers and 80 men; hospital battalion of 3 companies, 26 officers and 276 men; ambulance battalion, 3 companies, 14 officers and 168 men; collecting battalion, 3 companies, 14 officers and 288 men; veterinary company, 3 officers and 70 men, or a total of 69 officers and 892 men. There are also medical officers and enlisted men attached to each regiment and separate battalion within the division, making a grand total of 147 medical officers, of which 22 are dental, 15 veterinary and 1,524 enlisted personnel, many of whom are specialists of various types. An infantry division at war strength consists of 908 officers, 24 warrant officers and 19,063 enlisted men, or a total of 19,995 officers and men.

We next have in the army corps, which is one step higher, about the same division of troops, and consists of two or more divisions. Next higher is the field army, which consists of two or more corps. The troops are again distributed in the same manner, with the exception of the latter two, the corps and the army, which control the evacuation of all sick and wounded from the division hospitals back to the base, surgical and evacuation hospital centers, including all hospital trains and transports. Thus you can readily see the medical department plays a very important role in the army.

Each medical officer in the service has his own duties to perform, whether at war or in peace. He is the authority in all matters pertaining to sanitation in post, camps or on the march. He must be prepared to obtain the proper water supply and the disposal of all waste; assist in the location of camps, issue all sanitary orders for camps, posts, marches and battle areas. The disposition of the dead upon the field is one of his greatest problems, and he must keep an accurate account of all and where taken. He must keep in close contact with all components of the army around him. His records are many, and must be accurate on account of the many claims filed in later years of disability received while in the service. In fact, the medical officer is the one man in the outfit whom the enlisted personnel treat with respect, for he is so much different from all the other officers with whom they come in contact. The successful officer is the one who acts as the big brother to the men under his care; by this method he gains their confidence, and all other things come easy. Of course, we find malingerers, who are soon found out and made to pay for this method of shirking duty.

A medical officer on duty in a large post has the opportunity to keep up his practice along all lines, even obstetrics, as there are the families of the officers and enlisted personnel living upon the post. Another situation in the department, which is not definitely understood by the medical profession, is that the medical officers attached to small posts are encouraged to do civil practice and keep in touch with their profession outside the army circles.

Up to and including the Spanish-American War, the medical corps was looked down upon by the line officers, and many hardships had to be endured by this department on this account; but today the medical officer is one of the greatest assets to the army. He has a dual position; he has command of any and all medical corps men upon the post, and as a staff officer he becomes a consultant to the commanding officer of the post. He is absolute in all matters pertaining to sanitation and hygiene.

The first recognition of the Officers' Reserve Corps in our army so happens to be the medical corps.

# THE SANITARIUM AND ITS USEFULNESS IN CHRONIC DISEASES.

ENOCH MATHER, M.S., M.D., MT. CLEMENS, MICH.

This article is being written with the idea and hope that it may prove an aid in the treatment of chronic diseases to both the practitioner who uses physical therapeutics in his treatment of these bodily ailments and to the physician who uses medicine and diet or rest in helping the afflicted.

Most physicians will agree with me that rest and quietness are two of the most beneficial helps that can be afforded patients suffering from diseases of a chronic nature. To have these two requisites the patients must be removed from their home environment, where their immediate families surround them and needless noise prevails, and where the patients possibly see little home duties staring them in the face which they think need attention, and thus they feel called upon to do work, possibly against their physician's orders, which work might hinder their progress in getting well. It would thus seem quite natural that such patients should be removed from their homes and placed in sanitariums out of the city which are peaceful and of a home-like nature, where the patients can recuperate without the sight of home duties ever beckoning attention or the family or friends visiting.

Of course, it is preferable to all that patients at such institutions can receive attentions that could not possibly be afforded in the privacy of their homes. Both in medical and electro-therapeutic methods of treatment the utmost benefit can only be derived in a sanitarium where a full dispensary of drugs is available and where treatment rooms are provided with a full equipment of electro-therapeutic apparatus. We all know that circumstances sometimes will not permit patients who rightfully ought to be in a sanitarium to be placed in such institutions where they could receive the greatest care. Under such unfortunate circumstances it is the rightful duty of physicians to do all in their power to make the patient as comfortable as possible in his or her own home. This we all try to do, giving the best attention to' their ailments while there and leaving medicine for them with instructions how to take it until we can see them again. But while we are away possibly some pain somewhere crops up and the medicine doesn't relieve it, and rhus the poor unfortunate patient has to suffer for want of some trifling advice which the physician could give in just a few moments' time if lie was present. This condition doesn't have to prevail in the sanitarium, as here a nurse »r the doctor is always on hand to be consulted when needed. This, as we know, is one of the blessings afforded the sick who are able to recuperate at a sanitarium.

To provide all these comforts, a large dispensary, fully equipped laboratory, small emergency operating room for minor cases, rooms equipped with the latest in electro- and mechano-therapeutic apparatus, plenty of windows affording abundance of sunlight, a large veranda and beautiful grounds laid out in a park with large shade trees, are the fruits of my twelve years of diligent study of the needs of the chronic sufferer at Gray Gables Sanitarium, Above all, I have tried and fully succeeded, from the talks of my patients, in making my sanitarium home-like and far from the appearance of a public institution, and, due to a home-like atmosphere, the patients rest more comfortably and recuperate faster, as they do not have institutional features to constantly see, reminding them why they are there and thus possibly hindering their progress, due to worry. In my mind, one of the most beneficial aids in the recuperation of the sick is to keep their minds off their troubles, and this can only be done by preoccupying their minds with thoughts which are of their liking and keeping them occupied. Constant occupation, either by reading, writing, sewing or outdoor play or exercise of light form is greatly beneficial, and doesn't give the patients time for thought concerning their troubles.

Physical measures have always been and are now becoming more and more an aid in maintaining and regaining health. For instance, our public school systems are seeing the need of instituting in their school systems an educational program of instruction in the proper methods of acquiring and maintaining health. Physical exercise, under proper instruction, is one of the greatest benefits our children can have. What is life without health? Riches are unenjoyable without the health to enjoy wealth. We often hear the expression, "Health before wealth." and nothing is truer.

We find our healthiest people are those who live on plain food and fresh vegetables and an outdoor life. In analyzing why this true, we find. that sunlight, along with fresh air, furnish the requisites which produce this good health in people of an outdoor life. Sunlight, like nothing else, is the greatest requisite of health. It contains the rays of light that promote and stimulate the blood in its action. Certain rays of the many which sunlight possesses are absorbed by the blood, which, in its circulation through the body. carries health to every part of the human system. Due to our limited knowledge, it is rather hard to explain just why sunlight is so beneficial to our bodies. It is well known that the blood absorbs the rays and that the vital processes are vitally and beneficially affected by them. The chemistry of the blood is altered by some of the rays. and then, again, we have an increased activity of the vitamins and a stimulation of the endocrine glands. Thus health cannot really exist without sunlight and proper exercise daily.

Thus we see that people who are unable, due to their vocations of life, to roceive the requisite amount of sunlight, must therefore resort to artificial means of obtaining these essential rays of light. We thus find our hospitals and sanitariums of today equipped with great outlays of various lights. In my own practice I have found light therapy an interesting study and of great benefit in my practice. I have a room on each floor of my sanitarium equipped with various lights, among which are the actinic rays, radio-vitant rays, deep-therapy lamp, ultra-violet rays, the solar therapeutic arc lamp, and others, besides mechanotherapeutic apparatus such as the electric vibrator, high frequency current, static machine, the theraptctic traction couch, etc.

How easy it is to be able to tell a man who lives his life in the city from the man who comes from the country. The former has a sallow complexion, sometimes white and pale looking and anemic, especially if he has spent many years of toil at an office desk in a city, while the man from the country, who has lived an outdoor life, has a red, glowing, rugged complexion, with lots of "pep" about his appearance. It is really a pity that our city folks don't take a lesson from their country sisters and brothers and try to spend some time in the fresh air and sunshine instead of spending the time indoors. This, in my estimation, seems to be the seat of evil health which the great majority of city dweller." are bringing upon themselves—too much indoor confinement, thus avoiding fresh air, sunlight and open exercise.

To reiterate somewhat in systematic detail the above, we find the business man or woman rises in the morning, rushes off to work, getting there as the clock strikes the hour fur the day's grind to begin. At noon they go out to lunch in some nearby restaurant and spend the rest of their noonday lunch period undoubtedly indoors, and then resume their day's work. At five or six o'clock they quit the office for home, possibly in a poorly ventilated, crowded street-car, and after arriving home and eating supper they leave for an evening's place of amusement. This is the true summary of the average man or woman of today, and takes place four or five days and nights out of the week. Thus it is seen that very little time is spent in the open air, practically the whole day being spent indoors, the day being divided between the home, place of work, and that of amusement. Very little walking is required in going from one place to the other, as busses or street-cars are at hand to offer conveyance to and from wherever the pedestrian is going, hence little exercise is offered the city people.

It is a pleasure to see the schools, newspapers and magazines taking an active part in trying to instill upon people the need of more of an outdoor life. People who are working all day where artificial lights are used should try to spend' some part of each day out in the sunshine, if it is only a few minutes or half an hour. They should try to let as much sunshine play upon their skin as possible, as ordinary electric lighting cannot take the place of God's sunlight and daylight.

The sanitarium of today tries to teach its guests the proper mode of

living, so upon their recuperation they will have a tendency to live along proper lines, thus maintaining the good health received at the sanitarium. Most of our modern architects have a tendency when drawing up plans for homes to include somewhere in their plans a sleeping porch and sun-parlor. These rooms of a home should rank in importance next to that of the kitchen, and should be so situated where the most fresh air and sunlight are attainable.

To summarize a bit, we must remember that to properly recuperate from chronic illness we must have rest and quietness and proper medical attention, Worry must be dispensed with and physical exercise indulged in when permissible and an outdoor life led as much as possible in fresh air and sunlight in the country. Too much time must not be spent indoors and under artificial lighting conditions and in crowded, congested areas. Take, for instance, a child who is brought up in a city with no grounds around the child's home?, nothing but cement walks. You will find this child will become pale and delicate and run-down. Place this child out in the country in the fresh open air, with sand, soil and green grass to play in, and with plenty of wholesome food, preferably fresh vegetables, and soon a healthy glow will come to the cheeks. This goes to show it is the same with the man or woman employed in city life. Give them an open environment, with proper food to eat, and nature will take care of their health.

It has always seemed a pity to me that so many of our splendid hospitals are situated in environments that are congested, sometimes noisy and in some cases where heavy smoke prevails. The growing, ever-changing tendency of neighborhoods of cities often make distasteful the sites of our fine hospitals. Great advantages are afforded the sanitariums which are built in smaller cities or towns with more grounds for walks and outdoor amusements and where fresh air and sunlight can be had. Thus greater advantages for recuperation in the lines above mentioned those of rest, fresh air, outdoor amusements, etc.—can be procured in the sanitarium situated in the country or small city than in the large cities, and the conditions afforded in the sanitarium with large lawns, etc., surrounding it are preferred by patients recuperating from long illnesses.

To close, let me advocate that we all try to instill in our patients that they live a more outdoor life, and that they live more on vegetables and fruits of the land.

## WHEN SHALL WE FEED THE NEW-BORN BABE?

## JEROME EARL HOLMAN, M.D., INDIANAPOLIS, IND.

Much has been written on infant feeding and the kinds of foods, and various formulas are so numerous that pediatricians are inclined to accept the simpler types of foods; however, a search of the literature reveals very little on when to feed the infant. At first it would seem unimportant, but a further study shows the significance of when to feed the new-born babe rather than what to feed.

It is not uncommon to find infants during the first five or ten days of life who are failing to thrive normally because of insufficient food from the mother's breast. This may be due, at the onset, to the late filling up of the breast, and later to illness of the mother, to defects of the nipple or to poor secretory function. Some newly-born infants are drowsy and sleep at the expense of eating; others express their hunger by crying immoderately. In such cases, if the weight be carefully taken each day, it will be found to keep on declining longer than usual and become a pathological condition.

It is impossible to prevent a certain amount of loss in weight in the newly-born infant, but we believe that after the third day of life no further drop in weight need occur if some simple artificial food is used while awaiting the breast milk. Multiparæ who have previously nursed their infants successfully may be expected to repeat, and healthy young primiparæ with normal nipples will likewise be successful. Additional feedings will probably be necessary in older primiparæ and in mothers who were never successful nurses.

In suggesting that in the early days of life the infant be given additional food after each nursing, the writer wishes to emphasize that such a method must not be used to the extent of drying up the breast or interfering in any way with later complete maternal feeding. Furthermore, one must guard against overfeeding by this combined method. In most cases all the extra food needed in the first ten days is an ounce or two of the formula after taking the baby away from the breast. In most instances the artificial food can soon be discontinued entirely.

The observations recorded in this paper were made while attempting to determine whether food in addition to the breast milk is needed and of benefit during the early ten days. Although sweet milk is tolerated by many normal newly-born infants, the physician often fears that his formula, by being too concentrated, may upset the digestion. As a result, milk mixtures are often too dilute and are insufficient for producing regular gains. Pediatricians have known for several years that buttermilk is well tolerated during infancy, and have used the naturally soured milk and the Bulgarian milk. The explanation of its greater digestibility has not been offered until the last few years. Cow's milk contains a much higher percentage of mineral salts than is found in breast milk, and it is due to this fact that cow's milk is apt to be indigestible. Gastric digestion must provide sufficient acid for the milk so that the enzymes, such as pepsin, rennet and lipase, can act to the best advantage. When the food contains too much of the buffer salts, the gastric contents are slow in becoming acidified and make demands for hydrochloric acid secretion which is in excess of the infant's capacity to provide. An already soured milk facilitates the digestive process.

As yet we have seen no detailed report on the use of lactic acid milk in the feeding of newly-born infants, although this method has been used by several pediatricians in the last two years. Marriott has found that these infants tolerate acidified milk. Faber believes that acid milk is well handled, but suggests that the amount of acid which is added to sour the milk be gradually reduced until the infant is being fed sweet milk entirely. In the earlier experience of the writer the suggestion first made by Marriott was followed. At that time we used one drachm of U. S. P. lactic acid to each pint of milk, but we found that sooner or later this seemed to cause some distress. For the past year we have only partially de-bufferized the milk, using a less amount of the acid, namely, onehalf drachm per pint of milk, and have found this to be entirely satisfactory.

When the infant received no breast milk, due to inability of the mother to nurse, the complete bottle feeding was equally well handled. Reports from hospitals nurseries where the baby is given simply water until the breasts fill up do not show as much or as early a gain as when complemental feeding is used. Only those infants getting large amounts of breast milk regain their birth weight by the tenth day.

The value in this method lies not in the nature of the acid in the milk.

but in the fact that the milk is rendered more digestible by being sour, and more food can be handled. Milk soured in other ways is probably just as good; in fact, for many years the writer has not infrequently used buttermilk when additional food is needed for the newly born. This simple method is offered as one of value to the practitioner who may be in doubt as to the food he wishes to give the young infant deprived of sufficient breast milk. It should be emphasized that breast nursing be not discontinued even if there is only a little secreted. Whether sour milk should be fed indefinitely as the infant gets older will have to be determined by further experience. It would seem wise to begin reducing the amount of acid in the formula at the age of one or two months, so that the infant will gradually become tolerant of the sweet milk formula. After the age of ten days the amount of formula fed to the chtild will have to be increased if the mother's milk is inconsiderable, or if it tends to decrease from week to week. It is well to follow the accepted rule of providing at least one and one-half ounces of milk for each pound of the infants weight.

Other writers believe it unnecessary to feed acidified milk routinely to artificially fed infants. They claim the majority of normal infants do well on simple dilution of boiled milk and water, with carbohydrate added. Bearing in mind that the latter is simpler to prepare, it would seem that whole milk, water and some form of sugar could best be used.

In conclusion, let me say that after the third day a further loss of weight in the new-born babe, along with other symptoms of crying, deficient mother's milk, etc., I would suggest the addition of artificial feeding by the fifth or sixth day, and not when the baby is a month old and halfstarved. It is my belief that the proper and early feeding develops a properly nourished baby, which resists disease and develops a body more normal in type.

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#### DISCUSSION.

DR. C. W. BEAMAN (Cincinnati, O.) : I wish to commend Dr. Holman for his paper. It is very timely, and it is too bad that we do not have more time at our disposal for a long discussion of the subject. It occurs to me regarding his suggestion and in regard to acid milks that we have at our disposal the lactic acid milk and the protein milk, which are excellent if we understand how to use them.

## **MEDICAL DRAINAGE OF THE GALL-BLADDER.**

## J. S. BROWN, M.D., CARLISLE, IND.

I wish to call your attention to a procedure which is at once a great aid in diagnosis of diseases of the biliary system and at the same time one of even greater therapeutic value. This procedure is commonly known as non-surgical drainage of the gall-bladder, and is accomplished by means of the duodenal tube (Einhorn or Rehfuss) and depends on the action of magnesium sulphate on the duodenal mucosa and Oddi's sphincter muscle, which, as you are aware, is located at the mouth of the common duct.

Medical, or, as I started to call it, non-surgical, drainage of the gallbladder is not a new procedure. Back in 1917 Meltzer formulated his conception of contrary innervation as applied to the filling and emptying of the gall-bladder. Oddi's sphincter and the musculature of the gall-bladder are supplied with inhibitory and motor fibers from the splanchnic and vagus nerves, which act antagonistically to each other, so that when the sphincter is relaxed the gallbladder contracts, and vice versa. He also showed that the application of a solution of magnesium sulphate to the mucous membrane of the duodenum was followed by relaxation of Oddi's sphincter, a result which was not produced when the salt was taken by mouth.

Immediately after the publication of Meltzer's paper, in April, 1917, Lynn, of Philadelphia, was able to demonstrate that the use of

magnesium sulphate locally, in solutions of various strengths, in the human duodenum would very promptly deliver bile through the duodenal tube (Einhorn or Rehfuss) in varying quantities and varying quality. It would do this when the duodenum was previously bile free, indicating that the magnesium sulphate had relaxed the sphincter action of Oddi's muscle. Further than this, it was noticeable that the character of the bile recovered underwent certain definite changes in color and viscosity, first a light yellow-green, then a deeper, richer, more syrupy golden, and finally changing to a very uniform light lemon vellow, thinner and less syrupy than either of the first two, and that this sequence occurred in all normal cases. By this method it is possible to drain the gallbladder wholly or partially of its fluid contents; to drain the bile ducts and to obtain bile freshly secreted from liver cells; furthermore, it is possible to segregate these various biles from their numerous sources by collecting them in individual bottles for chemical, microscopical and bacteriological examinations that give us a direct method of differential diagnosis between various diseases of the biliary system.

With this foundation, may I not introduce at this point a case report which will at once explain the method more in detail and at the same time provide material for further remarks?

Early one morning, the tenth of May last year, to be exact, Mr. C. called me to come out to see his wife, who was having one of her regular gallstone attacks. It was my second time for this patient, and, as before, I gave her the hypodermic of morphine sulphate she usually needed every three or four months. It had been the custom of the previous doctor who had attended her to insist upon operation after each attack, and each time the elderly patient would insist that she would carry the stones to her grave. But as the attacks were becoming more severe and more frequent, something had to be done. So if ever there was a more fertile field for a nice big gall-bladder that needed a draining here was one.

Our patient, due to pain after eating, had been on starvation diet for several days, and was right then ready for drainage, but, due to the effects of the hypodermic, we waited until the next day. In the meantime, of course, we kept the stomach absolutely empty of any food, even milk. The Rehfuss tube was sterilized by boiling for a minute or two, placed on a clean towel with a glass of water convenient and

handed to the patient. She was instructed to swallow down to mark No. 1 on the tube. After this was accomplished, a syringe of this nature was used to wash out any mucus in the stomach which might interfere with our drainage and also nauseate the patient. Then the tube was swallowed to mark No. 2. If the patient had been able we would have instructed her to walk about the room, and in the meantime slowly swallow the tube to mark No. 3. But in this case we had her lie down on her back and slowly turn to the right. After waiting about fifteen or twenty minutes for the tube to straighten out, we injected some sterile water and immediately withdrew it. Now we are ready to begin the drainage. A freshly prepared 25 per cent. solution of magnesium sulphate warmed to body temperature is used. I usually inject two or three syringefuls unless the patient objects. Now the tube is clamped off and we mark time for about fifteen minutes more. In our case on hand now we were able to get an almost immediate response from our tube, but sometimes I have had to use the pump to help start. The patient is allowed to lie comfortably on her right side and the bile syphons out over the edge of the bed. The first bile that appeared was light yellow golden color, then suddenly changed to very dark, which we know comes from the gall-bladder. This had a gritty feeling and was very viscid, and required quite a time in passing. In fact, the writer made a call in the neighborhood and returned an hour later, just as the bile had assumed a lemon color, thinner and more limpid than the other two. A year has now passed since this one drainage, and our patient is bothered no more with gallbladder attacks.

The results obtained in this case of long-standing cholelithiasis were more than expected, but it shows what can be done in cases which are poor surgical risks. The same is true and results are more certain in (1) chronic cholecystitis or choledochus, as indicated by flatulence, dyspepsia, muddy skin, anorexia, constipation and malaria, a syndrome commonly known as biliousness; likewise in (2) sick headache, though in cases of long standing several drainages may be required; (3) some forms of asthma where the sensitization tests have not worked out satisfactorily, or where the cause is probably an infected gall-bladder; (4) infectious joint trouble, where the focal infection is difficult to locate: (5) chronic catarrhal jaundice without material obstruction, such as a large stone in the common duct; and (6) last, and I believe most important, that condition of the gall-bladder which follows malaria. typhoid, influenza or constipation, and is a chronic infection with biliary stasis Biliary stasis or atony of the gall-bladder is the one condition among others named in which medical drainage is the remedy *par excellence*. I consider it to be of extreme importance, because it can be diagnosed in its very early stages. This diagnosis is suggested in two ways:

First, the recovery of static or off-color bile. ranging from the deeper shades of golden yellow into the green yellows, green blacks and blacks, and possessing an increasing viscosity from that of a thick syrup to that of tar. Where the viscosity is heavy and shows much mucus and desquamating masses of bile-stained epithelium and precipitated crystals, this is considered atonic catarrhal cholecystitis and a potential forerunner of calculus.

Second, in the amount of static bile recovered. If a gall-bladder's normal capacity may be considered two and one-half ounces, and if four ounces or more of this type of bile can be recovered in bottles, it seems reasonable to assume that the gall-bladder in question must be functionally atonic and unable to move its contents promptly or the cystic or common duct must be partially obstructed; such conditions as above enumerated may be the forerunner of gall-stones and pathological gall-bladder conditions.

We are mechanically applying the surgical principles of free drainage for infected sacs, tubes and tissues, of free drainage for gall-bladders that are atonic and contain static bile in which sooner or later these develop stones or a more serious pathological condition, and while applying surgical principles we are doing it non-surgically and avoiding certain surgical risks. Besides this, and even more important, we are preserving tissue which may possess a power of recovery of function beyond our present conception.

Its real sphere of usefulness lies in giving a direct method of treatment in early stages of disease, diagnosed early, before gross pathological changes have taken place. Our aim should be to learn better to diagnose the beginning of these diseases and to institute promptly direct, rational and safe measures of treatment. We may legitimately hope that this method, if intelligently applied, may decrease the number of cases requiring serious and dangerous surgery.

## DISCUSSION.

DR. J. C. HUBBARD (Oklahoma City, Okla.): I wish to commend the essayist on this valuable paper, for the reason that gall-bladder and liver affections resulting from gall-bladder affections and infections are too often diagnosed wrongly and faultily treated. In many the introduction of a tube is of service. Dr. Brown did not mention two or three things that I have found essential After washing the patient's mouth and having the tube swallowed to the third mark, many times the tube is swallowed without going into the duodenum. There are two or three important things that happen when the tube enters the duodenum. There is usually a little reverse peristalsis, and upon the litmus paper test we find an alkaline condition, and there is the appearance of sand mixed with the mucus that comes from that part.

The essayist, I think, did not mention the use of atropine. Many times we have used belladonna to its physiological action. The pupils begin to dilate and the face becomes flushed before introducing the tube, and then, after the tube has been introduced to its proper place, we give 1/75 to 1/100 grain of atropine, depending upon the patient, for its relaxing effect.

Dr. Brown spoke of focal infections and intestinal "flu." I have come to the belief in my work that there is "no such animal," as the boy said at the circus when he saw a giraffe for the first time. I think the so-called intestinal flu is always a general infection located in the abdomen, many times around the gall-bladder, and because there is often obstruction at the ampulla or farther down the tract it is rather dangerous in acute cases to institute this measure, especially when the blood count indicates pus formation.

I wish to further emphasize Dr. Brown's statement regarding the early use of this measure. I consider it one of the most valuable things we have ever used. I use it post-operatively in the old cases where we have to operate and cannot remove the sac. We do the drainage, but find that the infection occurs, and we use this non-surgical method many times in post-operative cases of gall-bladder drainage.

DR. SAMUEL G. BOYCE (Little Rock, Ark.) : I appreciated this paper, and consider it very scientific, well written and well delivered. I am surprised and chagrined that my colleague. Dr. Hubbard, from down south of the Mason and Dixon line, has called to my attention the ignorance and simplicity of some individuals. He has said there is no such thing as intestinal flu. In 1908 Dr. Hatfield taught me from the text-book of Dr. R. L. Thomas that there are three types of influenza—the nervous type, the gastro-intestinal type and the respiratory type. In eighteen years of practice I have found that to be the case. I have also observed that we often have an appendicitis complicating the respiratory type of influenza during influenza epidemics. The lymphatic tissue is always affected by the micro-organisms that give us the disease known as influenza. I have found that Dr. Thomas is right, and wish to confirm what the essayist has said.

DR. BROWN (closing) : I wish to say that, naturally, I do not drain the gall-bladder during the heighth of the intestinal flu.

May I add a couple of Eclectic remedies that I also use after the gallbladder has been drained and the tube pulled out? Sometimes I put in some echinacea, which I find useful, and also some glycerine and ichthyol, and in case of mucous colitis colonic irrigations along with the gall-bladder drainage are helpful.

IT IS TIME TO CALL A HALT. A vicious bill before the present Congress threatens the freedom of the press. The bill, known as Senator Harris' bill (S. 1436), declares "that every newspaper printed in a foreign language is hereby declared to be non-mailable;, except such copy of any such newspaper containing in an adjoining parallel columns true and complete English translation of the text of each column of foreign-language print." This bill seems to us to revive the rigid censorship which prevailed during the war. The professional reformers behind this bill are feeling their way. The claim made tliat some foreign newspapers advocate policies which are inimical to our government is ridiculous. An American citizen should have the right to read a foreign publication in the original language and judge for himself, without the supervision of the almighty censor. We are not in Russia. If I desire to read a German medical weekly, or a French medical journal-who has the right to say "No" to me? As to foreign papers published in this country, most of them inculcate and instill good American principles into their readers. The narrow minds of many of our legislators not only disregard facts, but actually destroy the fundamental principles of American liberty. Freedom of the press-medical and lay-must be maintained by all possible means. ADLERMAN.



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