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Original Articles

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. A complimentary edition of one hundred reprints of his article will be furnished each contributor should he so desire. Covers for same, or any number of reprints, may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

SYMPOSIUM ON CANCER.*

I

THE NECESSITY FOR AN EDUCATIONAL CAMPAIGN FOR THE CONTROL OF CANCER.*

By C. JEFF MILLER, M. D., F. A. C. S., New Orleans.

LADIES AND GENTLEMEN: The compliment you have paid the medical profession of New Orleans by responding so promptly to the invitation to participate in the discussion of the subject of cancer is highly appreciated. The invitation was not extended without mature deliberation, for it was only after considering every phase of the situation that the profession agreed that it was time to place the facts regarding cancer squarely before the public. An appeal to the public a few years ago would have been fruitless, for the simple reason that surgery had so little to offer; in fact, until only within the past two decades

*The papers included in this symposium were read at a public meeting under the auspices of the Orleans Parish Medical Society, at Hutchinson Memorial, New Orleans, April 26, 1915. [Received for publication May 12, 1915.—**Eds.**]

it offered practically no hope to patients afflicted with cancer. We could not tell the truth to patients, because the situation was hopeless. In 1890 D. Hayes Agnew, one of the foremost surgeons of the time, stated that he had never cured a patient of cancer of the breast.

To prove that surgery has made splendid progress in cancerous lesions, it is only necessary to review the statistics now available from the numerous well-organized clinics throughout the world. Surgery is now saving twenty-five per cent of cases of cancer of the breast, when operated upon during the early stage of the disease. Practically the same percentage of permanent recoveries is reported for cancer of the uterus and stomach, when early operation is allowed.

This shows a tremendous improvement in surgical technic, to say nothing of the economic value of the lives saved for the support of families for three to five years in cases not permanently relieved by operation.

Surgeons have been untiring in their efforts to extend the operative field for cancerous lesions, believing that if they could make sufficiently wide removal of growths, they could outdistance the disease. They must now admit that operative technic has reached its limitations. We have perfected methods that now permit of removal of the entire stomach, the breast and uterus, with all the adjacent structures, with comparative safety for the patient. If the final results had improved in the same ratio as operative technic, the situation would be eminently satisfactory, but unfortunately such is not the case. The chief complaint heard throughout the surgical world today is that only a small percentage of cases (less than 10%) seeks surgical relief sufficiently early to permit of a cure. Think of ninety cases out of one hundred, victims of this dreaded disease, seeking relief only after they are doomed.

The medical profession's appeal to you today is to seek your co-operation in changing this state of affairs. We have learned a great deal about cancer that we think you should know—facts that should be common knowledge, truths that should not have to be learned by individual experience. We believe that as much is to be gained by educating the public as to the early manifestations of cancer as has been accomplished in combating tuberculosis by a popular educational campaign. The real status

of the tuberculosis situation today dates from the time when laymen entered the fight. Within a short period the popular campaign waged against tuberculosis, by such men as Eugene Wood and Livingston Ferrand, accomplished astounding results and showed the medical profession what a powerful instrument we possessed in public opinion aided by the public press. As Packer Syms says, "They taught us that frankness and truthfulness could be employed in dealing with these sufferers." This truthfulness became possible, because we can look upon tuberculosis with hopefulness and not with despair. When you can give a man hope, there is no reason why you should not tell him the truth.

The tuberculosis campaign was waged upon three facts, viz., that tuberculosis was communicable, that it was preventable, and that it was curable. When the public was convinced that this was possible, it was an easy matter to enlist their hearty co-operation in a national fight. This campaign was so successful that no intelligent person who reads the daily papers can help but know something about the prevention and cure of this malady.

The profession now makes a similar appeal for your co-operation in a war against cancer. No one can be neutral in this undertaking, for there is probably not a single family that can go back over two generations without having paid toll by the loss of some relation from cancer.

Cancer, with due consideration of its wide distribution and high rate of frequency of occurrence, is a human affection without a parallel in medicine or surgery. Principles of prevention in leprosy and tuberculosis are now well understood, and these affections are under reasonable administrative control and on the decline; whereas, the principles of cancer prevention are as yet but imperfectly unknown and, without the question of a doubt, the mortality from cancerous affections is on the increase in the United States and in most of the civilized world. On the basis of the most trustworthy statistical evidence, the number of deaths from cancer in the United States may be conservatively estimated at 75,000 per annum, and for the civilized world, as a whole, it cannot be less than half a million (Hoffman).

While the above facts on the surface appear totally discour-

aging, it cannot be said that our efforts have been fruitless. We have learned a great deal about cancer itself. While the actual cause of cancer is yet withheld from us, we have learned that it is *first a localized process;* that prolonged irritation predisposes to its development; that cancer does not develop in healthy tissues, but usually appears in chronic inflammatory lesions, old ulcers, birthmarks, etc. If we can prove to you that in its beginning it is a localized process and that it is most likely to develop in neglected, or long-standing, innocent lesions, we give you the keynote to its control. The natural conclusion would be that you must know enough about its early manifestations to seek surgical relief while it is still localized.

The profession wishes the public to know what we have learned about precancerous lesions, for in this phase of the subject lies our main hope until we know the actual cause of cancer. What cannot be cured must be prevented is a motto that is applicable in cancer as in typhoid, or smallpox. You must know that innocent growths may become malignant, that chronic inflammation due to bad teeth, to the presence of gall stones, ulcer of the stomach, and some injuries incident to childbirth—all predispose to cancer. You should know that the majority of cases of cancer of the stomach develop on the site of former ulcers and that seventy per cent of neglected, supposedly harmless, lumps in the breast become malignant. How easy it would be to excise all suspicious breast lumps and have them microscopically examined.

We wish to emphasize the already proven fact that the majority of cases of cancer are curable in the beginning. If you are to have an operation, why not have it in time. It will be charged by the ignorant and unscrupulous quack that this campaign is fostered by surgeons for their own profit. This accusation is easily answered. The surgeon will get you sooner or later and the fee will not be the less, because the labor you demand is the more. All the surgeon expects to receive will be the satisfaction of doing better work and of saving more human lives.

Bloodgood very correctly says that we want you to fear the beginning, not the end of cancer. You should know the conditions that predispose to cancer and the earliest known symptoms.

One of our first efforts will be to destroy the popular belief that pain is the most constant and chief symptom of malignancy. To many the idea that cancer can exist without pain is preposterous. Pain is really a late symptom, unless some important bodily function is involved early in the process. In most cases when pain becomes prominent the patient is already doomed.

We believe that you should know that few physicians are able to tell positively the nature of growths without the aid of the microscope; that when a lesion has progressed sufficiently for him to say positively, "that is cancer," that the process is already advanced dangerously far towards the inoperable state. Treating lumps by massage, liniments and salves, while waiting for developments, belongs to the methods of the dark ages in medicine.

You should know enough about the importance of microscopical and clinical methods to resent such delays if suggested by a physician, or friends, and know when you are obtaining rational advice. There is not a single person present who does not know that early operation is the safest treatment for appendicitis. If operation is delayed and the patient dies, the surgeon is not blamed for the disastrous results, but the physician who advised delay must assume the responsibility, and very correctly so. It required many years of constant drilling within and without the profession, backed up with volumes of proof, before this attitude towards appendicitis was accepted. This came about through educating the public, and no little credit is due the daily press for its share in moulding opinion by reporting the successful operations and discussing various phases of the disease.

All honor is due the public press of America for the promptness with which it grasped the true meaning of the proposed cancer campaign. Practically every powerful news organization of the country tendered its services and these have, within a comparatively short time, done splendid work for the cause. Some members of the medical profession doubted the wisdom of a publicity campaign because they believed it might create a panicky feeling, or cancerphobia, among the people. Another objection was the magnitude of the undertaking. The first fear has not been realized; on the contrary, many who harbored

seemingly innocent growths have been influenced to undergo examination and have been saved from untimely death.

The second objection is easily met. We know that you can educate small communities, because it has been done, and it will be just as easy to educate millions if you use the proper agencies, viz., the united press of the country, which sends its messages into every hamlet of the world.

The American Medical Association was the first large representative body to take up the question of education. Its labors were chiefly aimed at preaching early diagnosis to the family physician and showing him that early operation was successful.

The next great impetus was given the question at a meeting of the Clinical Congress of Surgeons of North America, in 1912. After discussing the results of operations presented by master surgeons, the organization endorsed resolutions authorizing an active campaign. The proposal promptly received the endorsement of all the leading national associations, particularly the American Gynecological Society and, through the efforts of some of its prominent members, sufficient funds were found to warrant the foundation of a cancer society. This society has been incorporated, with charter, by-laws and officers, under the name of the American Society for the Control of Cancer. The word "control" was adopted, because the world should know that the medical profession has accumulated facts that will prove that the menace of cancer can be controlled.

This organization aims to establish a clearing house of information on cancer and to become the channel through which authoritative statements based on the study of medical and statistical records will be made from time to time. Such statements will represent no single individual or institution, but a collective opinion based upon available evidence from many individuals and institutions who, in the past, and at present, have been and are treating cancer, and who have kept the evidence and have ascertained the ultimate results. When, by this method, new light is thrown on the subject, the findings will be spread abroad through every available channel. The Society will endeavor to obtain co-operation of periodicals, the daily press, and will further the organization of lecture courses for women's clubs, social service workers and whenever opportunity offers.

With this splendid organization already equipped and actively

at work, only one factor is necessary to insure its success. The work cannot be done without money. The labor cannot be purchased at any price, for it will be cheerfully given by the profession, but the necessary expenses for carrying on the clerical duties must be met by donations, or a nominal membership fee.

As the local member of the Executive Committee of the American Society for the Control of Cancer, I ask your hearty endorsement of the work it is attempting, and cordially invite you to become a member. The annual fee is nominal, and every dollar spent in this movement may mean the saving of some worthy member of this community.

II

THE PRECANCEROUS STAGE; PREDISPOSING CAUSES OF CANCER, INCLUDING HEREDITARY INFLUENCE.*

By WILLIAM H. HARRIS, M. D., New Orleans, La.

A specific histo-pathological picture for the so-called precancerous stage has not been recognized by pathologists, *i. e.,* there is no microscopical picture preceding that of definite cancer by which one can say this lesion will absolutely become cancer. Under the microscope the condition either is cancer or it is not cancer. We do find, however, evidences of certain tissue disturbances and changes which, together with the careful clinical observations and history obtained by the surgeon, would suggest the strong likelihood of the future occurrence of cancer. These same pictures, however, are capable of resolution and of repair.

The word cancer means "crab," and has been applied to this growth because from the main body of the tumor there extends processes spreading into the surrounding tissues or flesh, hence supplying the fantastic ideas of the legs and claws of the crab. The opinion is prevalent among the laity that a tumor is one form of growth and that a cancer is another; such, of course, is not the case. Tumor is the genus or general term covering all growths, and cancer is a species, or one form. In other words every cancer is a tumor but every tumor is not a cancer. So it occurs that when the tumor does not happen to be a cancer the tendency on the part of the laity is to call all such growths

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tumors. Besides cancer there are many other forms of tumors, as, for example, those of the fatty tissues or a lipoma, tumors of the muscles or a myoma, of which the most common form is the fibroid tumor of the uterus or womb. Again we have tumors composed of bone tissue, called osteoma; of cartilage or gristle called chondroma, and thus on to a considerable extent.

Physicians make a distinction between cancer, or carcinoma, and sarcoma, both forms of which are malignant, *i. e.*, usually fatal. Cancer, or carcinoma, is a growth of the epithelial cells, *i. e.*, those units of the human body which carry on its many functions, whereas sarcoma is a tumor of the connective tissue, *i. e.*, those strands of tissue which form the supporting framework for the functioning epithelial cells. Cancer usually occurs in old age and after middle life, whereas sarcoma usually occurs in children and before middle life; there are exceptions, however, to these general rules.

Before defining cancer, therefore, let us see what is meant by the general term tumor. A tumor is a new formation of cells, usually more or less circumscribed. These cells multiply continuously and without the control of normal regulations of the body; they tend to mimic the cells from which they arise. Tumors serve no useful purpose and lack an orderly structural arrangement. They have, at least at the present time, no definite assignable cause for their existence. We mean by a malignant tumor, of which the cancer is a very common form, one in which certain of its units, called cells, are apt to be carried either by the blood system or lymphatic system to other parts of the body. This we call metastasis. For instance, in a cancer of the stomach portions are commonly carried to the liver, or, again, in a cancer of the breast metastasis to the glands under the arm occurs quite frequently, *i. e.*, parts of the cancer are carried by certain tubular channels of the body, the blood and lymph vessels, to these little nodules called lymphatic glands. These portions thus carried when lodged into the gland structure have the power of continuing their growth and thus forming secondary tumors. Herein is the most important feature of early diagnosis of cancer, for it is usually only after the cancer has grown some time that the little portions are wafted away to form secondary tumors; hence, if advice is sought in the very beginning of the growth and an absolute diagnosis is made,

which often can only be revealed at this very early stage by a careful microscopical examination, the outlook for treatment is much less gloomy. It is the failure on the part of the patient suffering with little ulcers that will not heal, or little swellings or knots that do not disappear, to consult their doctor, which fact permits of the advancement of these growths to such an extent as to allow the dissemination of cancer to other regions close by or remote from the original growth. It is the strict duty of the doctor consulted to clear up absolutely the character of any such suspicious condition. The importance of regarding seriously any irritated pigmented mole, chronic ulcer of the tongue from a jagged tooth, persisting small lump of the breast and the like, I shall leave for the other speakers to emphasize from their vast experiences in their special lines.

WHAT IS THE CAUSE OF CANCER?

The worker who can supply evidence or research demonstration furnishing the undoubted answer to this question shall become a second Pasteur.

The present status of the cause of cancer is found, on the one hand, in the opinions of men drawn from careful and extensive observations, or, on the other hand, from the very interesting work upon the tumors of lower animals. We can, therefore, group these considerations of the cause of cancer under two heads. Opinions from observation, or theories or hypotheses and experimental work upon cancer and other tumors of various animals, as, for instance, mice, chickens, fish, etc.

The theories are those of Cohnheim and of Ribbert. Cohnheim has formed the hypothesis that all true tumors arise in faulty embryonal development. He considers that parts of the body or cells during development previous to birth may be displaced or become superfluous or do not take on their proper function. These may so remain after birth for years, and in later life commence growing in their eccentric uncontrollable manner. There is no doubt that this theory is clearly supported in certain forms of tumors, for instance in the black mole, which is certainly a localized faux pas, or error on the part of nature, and from which certain tumors do spring. Again, the misplaced cells called "rests," as where cancers or some other form of tumor are found having the definite structure

mimicing some organ remote from the tumor, as adrenal and thyroid "rests." This theory is, of course, most strikingly applicable in the dermoid tumors or teratomata, which tumors are absolute evidences of the imperfection of nature, in as much as bone, hair, teeth, sometimes contained in a part of the lower jaw, skin and the like are often found. It is considered that these are really evidences of a misplaced little brother or sister which nature intended to form as a twin to the person burdened with such. While this theory of latent or misplaced cells at birth does definitely explain certain of the tumors it cannot fit in with all.

Ribbert's and Weigert's Theory: These observers consider that if the normal relations of cells of the human economy are disturbed to such an extent that the normal restraint or equilibrium is lost, the consequence is that an abnormal uncontrollable growth is then assumed. In this theory, the evidence of cancer formation by continued irritation and chronic inflammation finds a ready elucidation, such as the skin cancer of the lip from pipe smoking, the cancer of the tongue from jagged teeth, the cancer of the womb from a long standing ulcer of its mouth or cervix, etc. But again, there are many instances in which this idea or hypothesis cannot be made to dovetail.

To leave the theoretical side and consider the practical experimentation that has been accomplished, it might be well, in conclusion, to narrate certain of the works bearing upon the cause of cancer and other tumors in the lower animals.

Peyton Rous, of the Rockefeller Institute, has found and definitely proven that certain tumors of chickens can be macerated and emulsified and the fluid expressed. This juice can then be passed through a filter, through which some of the smallest germs cannot pass, and the filtered part be injected into the breast of another chicken and a similar tumor will arise in the course of time. It is noteworthy that these tumors are more constantly produced in hens of the same breed.

Gaylord and Marsh have shown that the cancer in fish is capable of transmission to other fish. They employ the fish of the salmon species which have cancer. After placing them in tanks and allowing them to sojourn there for some time, they are removed. During that time scum has formed upon the sides and bottom of the tank and the water has been, of

course, polluted. When fresh fish are placed therein, they also become victims of carcinoma. Placing certain chemicals, such as iodin, mercury and arsenic, favorably affects the disease and interferes with the cancer's production.

Probably the most interesting work in the lower animal and bearing especially upon the question of the influnce of heredity is that of Maud Slye upon cancer in mice. The study of this type of animal cancer is of especial interest in that it resembles most strongly the cancer of the human. Maud Slye has worked with a stock of over 10,000 mice during a period of over eight years. It is readily appreciated that the records bearing upon the inheritability of cancer in the human are narrow and liable to many flaws. One rarely has the opportunity of observing more than two generations, and again the clinical histories are subjects of much ignorance and many fallacies. It is probable that the greater number of us here present have no knowledge of the cause of death of our grandparents, certainly not at least of our great-grandparents, and whatever knowledge we may have is liable to much incorrectness. Hence the almost hopeless research facilities on the problem of heredity in human cancer. The field for observations of inherited influences in cancer of mice, however, is very vast in that the number of generations observed is very great and the experimental opportunity of inbreeding and hybridizing cancerous strains is easily carried out. Slye has observed that cancer formation tendencies can be hybridized and bred out of mice at will. This potentiality can be controlled with the regularity of the Mendelian Law, just as albinism and the whirling property can thus be manipulated. She finds that even with healthy mates having cancerous ancestors on both sides the progeny is very prone to cancer in a large percentage of instances. With a cancer lineage on one side only the progeny develop cancer to a lesser extent, and so on remarkable results are obtained by balancing the various factors. She is not of the opinion that cancer per se is inherited, but that a predisposition and great liability is thus carried through generations. It is seen through her work that such offsprings, when the cancer age has been reached, develop such growths upon certain provocations, such as injuries from fighting or from accidents in the cages, the irritation of misplaced teeth, injuries produced by nursing and the like.

III

SKIN CONDITIONS WHICH LEAD TO CANCER.*

By ISADORE DYER, Ph. B., M. D., New Orleans, La.

We have to do tonight only with cancers which affect the skin. It is permitted, therefore, to discuss for a moment the explanation of the occurrence of skin cancer, without attempting to be too scientific before a lay audience.

At this time no one knows what causes cancer; there are many theories. Some believe they are of chemical origin and come from certain articles of diet, especially meat; another chemical theory suggests that cancer occurs oftenest among those whose occupation forces them to inhale smoke and soot, as chimney-sweeps. Quite a few contend that cancer is contagious, and its rapid spread and its occurrence in families would help out this opinion. Already certain microscopic organisms have been suggested as the cause, explaining the contagion; but none of these theories have been proven.

Skin cancer has many characters different from cancers in other organs; different in their physical appearances and in the ways in which some of them grow. Why skin cancer should occur at all we do not know, but we can have an opinion just as well as the other theorists. Some of us believe that where skin cancer occurs, there is some susceptibility to this disease, some predisposition born with the individual. We try to explain this by comparing the human being to a building, in which many sorts of materials are used for its construction. After the building (the human body in our argument) is completed there are remnants of the materials left over and lying about, ready to catch on fire at the first opportunity. This idea of cancer is that advanced by Cohnheim, already discussed by Dr. Harris.

With the human body these materials must remain somewhere inside or on the body, for the time being as a part of it. Now such materials may take many different forms. In one person it may be an extra finger or toe; in another individual it may be a wart or a mole; in another, it may be a birthmark, or an overgrowth of hair in the wrong place; in another it may take the form of a cyst, or a fat tumor, or a muscle tumor—each showing an unnecessary provision of tissue, not forming a

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natural part of the makeup of a perfect human being. Such excess of tissues of various sorts are so common that certain disfigurements caused by them are used to identify the individual, particularly when the disfigurement is different or unusual in its form.

Now many, even most, of these extra tissues or materials are of no serious significance to the individual bearing them. Some of them, however, are of importance, especially those which, like timber and shingles in the building (to continue our comparison), are inflammable when the accident occurs which sets them on fire.

Most skin cancers owe their development to the presence of left-over cells originally used to make the superficial skin, and with the surplus cells deposited here and there in the skin, particularly where you would most expect to find them:

On the Lips;
On the Nose;
On the Eyelids;
On the Cheeks;
On the Ears;
On the Neck;
On the Backs of the Hands.

We may find skin cancer in other locations, but these places are where we *expect to find them.*

The age at which skin cancer may begin should be figured at twenty-five, though it seldom appears before thirty. With the progressing maturity of the individual after thirty the likelihood of skin cancer increases; in other words, the older the person the less the resistance in the skin structures. Just like anything else in the world, as it grows old the skin begins to break up, or better, to break down. If the breaking down process happens at one of the material deposits of overplus cells, the process is rapid and a cancer results.

Now the kind of things on the skin which must be observed for cancer are not as many as they are important:

All Moles or Warts which grow in size;
All Moles which change their color and grow dark brown or black;
All Small Scaling Spots which grow thicker and scab or bleed easily;

All Scaling Warts, especially on the Lips, the Ears, the Eyelids, the Cheeks, or the Hands.

Hard places on the face and hands of old persons are sure to scale, but do not always become cancers; they are signals of danger, however. Cancer may occur in faulty glands of the skin, both sweat glands and fat glands, the fat glands particularly. When this occurs the glands change their usual function and scale away instead of forming fat or sweat. This makes them liable to break down and so become an explosive focus for a cancer. They do so quicker when they are irritated by picking with the fingers. The eyeglasses at the bridge of the nose are frequent sources of irritation resulting in cancer. The pipe, cigar and cigarette at the lip start the cancer of the lip, mouth and tongue.

Perhaps the most frequent excitant of all, so far as skin cancer is concerned, is dandruff. It falls from the scalp and lights on the ear, eyelids, nose, neck, lips and face, and if there is already a scaling spot, or a thickening, or a wart, a mole, or a gland ready to receive the dandruff scale, it sets this spot alive with activity and it goes on to form a skin cancer. Probably sixty per cent of skin cancers are due to this cause, and many a cancer has been prevented and may be prevented by curing the dandruff or by preventing it.

Common use of the hair brush spreads the disease, and for the prevention of cancer alone the Board of Health should forbid the hair brush in public places, and especially in barber shops and hair dressing establishments. In the household there is developing a better hygiene, and people are beginning to know that a hair brush should be personal, just as a tooth brush is. If no other idea than this danger of dandruff is carried home by this audience I shall be satisfied.

IV

THE EARLY SIGNS OF CANCER OF THE WOMB.*

By ERNEST S. LEWIS, B. Sc., M. D., New Orleans, La.

The subject assigned to me is of deep interest to women who furnish annually so many victims of this dread disease, attended with great suffering and horribly repulsive features. It is not surprising that many of them at the change of life are

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filled with apprehension, knowing that the toll of cases is greatest at that period.

I shall endeavor, as far as practicable, and with regard to the object of this symposium, to express myself in terms easy of comprehension by the lay members of this audience. At the same time I feel that to do justice to the subject, something more is required than a mere description of the early signs of cancer, which is the title of my paper in the program.

Whether cancer is on the increase by leaps or bounds, as one writer states, I do not know. His claim, and those who think with him, may have a "raison d'etre" in the increase of population and concentration of cases in hospitals, from which statistics *are* derived.

We know nothing of its nature or origin, but believe it to be local at first, with a tendency to spread to surrounding structures, and through blood and lymph channels to distant parts and organs. It then ceases to be local and becomes general. This emphasizes the importance of discovering it early. Two varieties of cancer affect the uterus; one from its vaginal aspect, the other from the interior lining of its cavity. Both are equally destructive and fatal. The first, more superficial and accessible to sight and touch, is more readily discovered. The other, arising within the cavity, and therefore concealed, is more insidious in its approach and development, and may progress considerably before being suspected, as its chief symptom, hemorrhage, is common to many other conditions. Whilst no age is exempt, it is more frequent between forty and fifty. Women who bear children are also much more liable than the sterile and single. This is due to injuries from childbirth, tears and contusions, coupled with degenerative changes incident to that period when the organs become functionally dead. Admitting the greatest frequency of childbearing women to cancer, can anything be done to lessen the percentage of cases? I claim that much can be accomplished. All external injuries are either corrected at once or within twenty-four hours after labor; those of the womb, from improper environment or imperfect asepsis, are deferred and later forgotten. Now these tears, predispose and lay the foundation for cancer, and are, therefore, more serious than the external. They should be attended to, if not

at the time of occurrence, at least in two or three months after labor. This should be a cardinal rule in obstetric practice.

Now let us consider the phenomena of the change, to correct a fixed popular error, and because of its relation to cancer.

The change is physiologic, and but for some functional nervous troubles not always present, is attended with no more disturbance, in an otherwise normal and healthy woman, than is observed in the establishment of menstruation at puberty. The belief that the change of life is associated with hemorrhage is absolutely unfounded, and a grave error for which innumerable lives have been sacrificed. Strange, but nevertheless true, there are medical men who entertain this view, otherwise it would be difficult to understand their indifference and failure to examine at once those who consult them for hemorrhage instead of months later, as I have been frequently told. Hemorrhage has no place among the natural phenomena of the change, though firmly ingrafted in the female mind; it is a deep-rooted legacy. Baer, in his analysis of 2,200 cases of uterine hemorrhage, finds that it belongs to the early years of greatest fecundity, and to any period of menstrual life, rather than to the change.

This summary of anatomico-physiologic data regarding the uterus in its relations to cancer, was deemed necessary; in fact, of prime importance, before calling your attention to the signs of the initial stage of this justly dreaded affection. These signs to a woman are purely objective as nothing is visible but hemorrhage, and vaginal discharge, which are not pathognomonic of cancer, as they occur in other conditions. In the skin and breast there is something tangible and manifest. In the case of the womb it is concealed; that is the pity of it; even the element of pain is wanting at first and only appears later in agonizing paroxysms. In an advanced stage the hemorrhage increases and also vaginal discharge, which, if offensive in character, denote breaking down and gangrene of the cancerous growth. How important, therefore, an early diognosis to the patient and to the surgeon, who knows that it is then and then only he can offer a reasonable hope of a permanent cure. Even then it is possible that some cancer cells may have escaped beyond the operating area, to be followed sooner or later by recurrence.

I do not wish to convey the impression that even in inoperable

cases hope should be abandoned, as there exists a possibility in a limited number of cases that however much of the womb is involved and destroyed, the disease has continued local through barriers set up by nature. These cases sometimes recover, whether treated by curetting followed by chemical caustics or potential cautery, showing in many instances no evidences of return after ten or fourteen years. This happy result cannot however be hoped for if cancer cells have wandered beyond the womb, no matter what treatment is used. Even radium, whose curative power is beyond doubt, in a strictly limited cancer, when a sufficient quantity is used, proves a failure, as stated by Delbet, with the collaboration of Moquot, Herrinschmidt and Mock in a report published in the "Bulletin of the French Association for the Study of Cancer" in the March number of 1914. It states: "What do we obtain from radium in inoperable cancer of the uterus?" Improvement is the rule, relief of pain, arrest of hemorrhage, suppression of discharge, destruction of the cancer, cicatrization followed by contraction of the vaginal fundus, but the cancer continues to develop. It does no more than other means employed. It does it, however, in a neater, less painful and less disagreeable way.

In the elaboration of this subject I have had a purpose. You have heard that there are no signs characteristic of cancer in its early stage. That hemorrhage and vaginal discharge occur in other conditions. They may even be wanting for some time after the invasion of cancer. I have also told you how nearly hopeless is all treatment in inoperable cases. I have done so to put you on your guard, and with a view to emphasize the importance of examinations two or three times a year when approaching or during the change of life, the most favored period for cancer.

I have sought also to impress you with the fact that uterine hemorrhage is always pathologic and calls for an investigation by a gynecologist.

V.

CANCER OF THE STOMACH.*

By DR. E. DENEGRE MARTIN, New Orleans, La.

LADIES AND GENTLEMEN: I have been asked to talk to you tonight on the question of cancer of the stomach. The subject

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allotted to me is the most difficult for the reason that it is not an easy matter to diagnose cancer of the stomach in its early stages, and by the time the diagnosis has been made, usually the disease is beyond hope of cure. We do know, however, that it is most likely to occur in people who have passed the middle age, and is usually preceded by so-called chronic indigestion, that is, by a more or less constant disturbance of the stomach. We know that a large percentage of these cases originate in ulcers of the stomach. Ulcers, however, are more likely to occur in the young than in the old, and can be cured by medical treatment, but cancer is purely a surgical disease. Stomach surgery is about thirty years old today, but in that time it has made rapid strides, and we are curing cases today that were at one time considered incurable. In fact, for many years it was considered purely a medical condition, but we know now that all cases of ulcers which do not yield to treatment in a reasonable time should be given surgical attention. To go into the symptoms of the diagnosis of cancer would be a subject too intricate for me to undertake, and would occupy much more time than is allotted to me this evening. I have simply this to say, that when you have reached the age of forty and are suffering from some digestive disturbance, I advise you to consult a physician, not one who will merely feel your pulse and look at your tongue and prescribe some proprietary medicine for digestion, for such a man is doing you a grave injustice, but consult one who is competent and will take the trouble of making a thorough and most careful examination. Cancer of the stomach stands third on the list today, and yet, in its incipiency, it is curable. Therefore, do not look upon it as a hopeless condition, but use every means at your command and have a diagnosis made while it is still curable. Cancer always originates in some lesion, that is, a tumor or scar. Therefore, if any of you have a lesion about you that God did not give you, have it removed, for by procrastinating you are simply flirting with the undertaker.

SYMPOSIUM ON CARCINOMA OF THE UTERUS.

I.

THE USE OF THE PERCY CAUTERIZATION AND INTERNAL ILIAC LIGATION, AS A PRELIMINARY STEP TO THE WERTHEIM HYSTERECTOMY.*

By S. M. D. CLARK, M. D., F. A. C. S.,
Professor of Gynecology and Clinical Obstetrics, Tulane University, New Orleans, La.

It was Byrne of Brooklyn who first called serious attention to the value of heat in the treatment of cervical carcinoma. His personal results were brilliant, but were never even approached by the host of others who attempted to emulate his work. The reason for this, I believe, was due to the fact that there was at the beginning no definite technical plan for the therapeutic application of heat, and each individual operator worked along different lines.

In 1912, Percy of Galesburg, Ill., supplied a clean-cut technic for the systematic application of heat in the treatment of cervical cancer. He devised the water-cooled speculum for protection of the vagina, a remarkably efficient electric cautery, and first made use of the hand in the abdomen in order to control the degree of heat from within. He based this work on experiments which revealed that it took over 112 degrees to kill cancer cells, whereas it required a temperature of 131 degrees or over, in order to destroy the cells of normal tissue.

While the value of heat in the treatment of cancer has been proven beyond question, it should not be utilized to the exclusion of other methods, which offer also distinct advantages. Heat alone cannot possibly accomplish the surprisingly good results obtained by combining it with extensive arterial ligation, followed, when possible, by total extirpation. My present general plan of treatment consists, therefore, not only in the use of heat alone, but in cauterization, ligation of both internal iliacs and one ovarian, and finally, Wertheim hysterectomy.

For the sake of convenience, we have divided our cancer cases into four groups.

GROUP ONE.

These include all cases that appear at once clearly favorable from the standpoint of a radical cure. Locally, the growth is

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small, the uterus is freely movable and there is no parametrial involvement. Subjectively there is no pain, the hemorrhage has been slight and altogether the patient is a good surgical risk.

This group is treated by Percy cauterization for twenty minutes, immediate preliminary internal iliac ligation, followed at the same sitting by Wertheim hysterectomy. The extra twenty minutes required for cauterization will not overtax these good surgical risks and has several points in its favor. The cauterization sterilizes the vagina and kills the superficial cancer cells, thereby diminishing the possibility of grafting and of peritonitis. Furthermore, the preliminary iliac ligation diminishes the amount of bleeding during extirpation to a remarkable degree.

GROUP TWO.

These comprise the borderline cases. Locally, there is a distinct cervical and vaginal vault involvement, though the uterus is still movable and there is no definite extension in the parametrium. Yet, on account of prolonged hemorrhages and toxemia, the hemoglobin is low and the patient's general condition is distinctly below par.

This type of case can be transformed from a very doubtful to an excellent surgical risk. Some of the most satisfactory results obtained have been in the cases belonging to this group. The plan of procedure in this instance is to cauterize thoroughly by the Percy method and while in the abdomen to control the heat, to ligate both internal iliacs and one ovarian. Such a case is then allowed two or three weeks before anything further is attempted. During this time it is gratifying to note the improvement that takes place. The hemorrhage and foul discharge cease promptly, the carcinomatous area diminishes appreciably in size, the blood picture improves, the patient gains weight and a general transformation occurs. This improvement, however, is but transitory, and at the end of the time indicated the Wertheim hysterectomy is performed. In two of my cases belonging to this group, after total extirpation, no cancer cells could be demonstrated by the microscope, though a number of sections were made from the parametrium, vaginal vault and what was left of the cervix.

GROUP THREE.

In this group are included all those cases that are clearly unfit for radical hysterectomy. The cervix shows extensive

involvement, extending below to the vaginal wall and above into the parametrium. The mobility of the uterus is distinctly impaired, pain is usually present, and the patient's condition is unfavorable from every standpoint.

This class of cases furnishes but little hope of permanent cure by means of ultimate total extirpation. There is no question, however, that they can be greatly benefited by internal iliac ligation and repeated Percy cauterizations.

A number of my cases in this group have been strikingly improved. Their lives have been prolonged and made comparatively comfortable, where, before treatment, they were bleeding constantly, distressed by a profuse, foul discharge, suffered considerably, with daily increasing abdominal pain, so that their very existence was made miserable from morning till night. Two of these cases improved to such extent that they are living today, after total extirpation, and give promise of remaining permanently cured.

GROUP FOUR.

We include in this class all those absolutely hopeless cases where the bladder and rectum are involved, with the usual attending complications. For these patients nothing whatever can be attempted. It is to be hoped that, as the development of early diagnosis progresses, this present large group will proportionately diminish.

While the plan of treatment which I have outlined here tonight has given us the most promising results, I am not blind to the fact that, for the present at least, we cannot allow ourselves to become over-enthusiastic. The work at present has been of too short duration to be able to speak of final results. But, while the problem of the treatment of cervical cancer remains in its present unsettled state, let each individual worker in the field attempt its solution, by whatever means have proven most efficient in his own personal experience. Then, after the necessary lapse of years, when the final reckoning comes, let us all adopt that method, which has proven, beyond a doubt, to surpass every one of the others.

II.

RADICAL OPERATION (WERTHEIM) FOR CARCINOMA OF THE UTERUS.*

By W. KOHLMANN, M. D., New Orleans, La.

Cancer, and particularly cancer of the uterus, has received general attention from surgeons, and especially gynecologists, in the past few years. Very little, though, has been accomplished regarding the ultimate cure of this disease, mainly due to the fact that an early diagnosis is not made and cases come for surgical relief too late for successful radical operation.

Reports from European countries show better end results and higher operability than in this country; most probably due to the more general education of the public on this subject, and probably, too, to the thorough education of the physician in this special line. But I think more yet could be gained by arousing the physician more thoroughly to the consciousness of this great responsibility.

There can be no doubt today that by removal of an early carcinomatous uterus the patient may not only temporarily but, in a good percentage of cases, be permanently cured.

A safe surgical procedure has been developed in the last decade which promises a high percentage of permanent cures with a low primary operative mortality—if cases are recognized and subjected to surgical treatment in early stage.

Vaginal hysterectomies of the carcinomatous uterus were first attempted in the early part of the last century. R. M. Langenbeck made a sub-peritoneal excision in 1813 and performed this operation three times afterwards. Sauter, in 1821, made a vaginal excision, after opening the anterior cul-de-sac, without using any special precautions against hemorrhage. Delpech loosened the cervix by the vaginal route and removed the uterus through the abdomen. Similar operations have been performed by a number of other surgeons, but the mortality was so high that the continued use of this surgical procedure was repudiated by most operators.

The merit of having laid down the fundamental principles of the abdominal hysterectomy is due W. A. Freund who, on

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January 30, 1878, made the first abdominal extirpation of a carcinomatous uterus in Trendelenburg's position. The patient, sixty-two years old, made a good recovery and was considered cured on the nineteenth day. She died from recurrence after one year.

The technic employed by Freund was the following: Emptying the bladder and rectum, irrigation of the carcinomatous uterus with a 10% solution of carbolic acid, removal of the broken down carcinomatous tissue by the aid of a sharp spoon and cauterization by heat, elevation of the patient so that the head was lower that the pelvis—Trendelenburg's position—opening of the abdominal cavity in the linea alba from the symphisis to the umbilicus, suture of the peritoneum to the skin. The intestines were covered and held back from the pelvis. A suture was passed through the body of the uterus from the anterior to the posterior surface, by means of which the uterus could be easily pulled upward. The broad ligaments were next tied off, first the tube to the ovarian ligament, then the ovarian ligament to the round ligament, and then the base of the broad ligament. The last suture was carried down from the round ligament through the anterior cul-de-sac into the vagina and from there back to the Douglas pouch. For this procedure he used a specially constructed needle. This is followed by a transverse incision of the peritoneum, the bladder is pushed off from the uterus by blunt dissection and the vagina opened. The same procedure is carried out on the posterior surface. Now follows the removal of the uterus from its attachments by means of scissors or knife. The sutures are carried into the vagina and the peritoneum closed by interrupted sutures. Irrigation of the pelvic cavity with carbolized water.

This method of operation, as recommended by Freund, was adopted soon by a number of surgeons, but on account of the high primary mortality (70-75%) was soon displaced by the vaginal extirpation. About the same time Czerny developed his method, to remove the uterus by the vaginal route (he performed his first operation August 8, 1878). This method came into great favor with most of the known operators at that time on account of the comparatively low mortality, about 30%. This mortality soon decreased to an average of about 8%.

Notwithstanding the low operability of the vaginal operation,

the frequent early local recurrence on one side, and on the other side the impossibility to operate in healthy tissue, to remove the broad ligaments and iliac glands, which soon were recognized as important factors in regard to the recurrence of the disease, soon proved the necessity for an improved technic of an extended abdominal operation.

Bardenheuer in 1881 advised vaginal drainage, which was a factor in reducing the mortality to about 33%. A new impetus was given in 1895 when Rumpf, Clark and Ries, independently of each other, insisted on the necessity of more extensive removal of the cellular tissue of the broad ligaments and the lymphatic tissue and glands, and demonstrated the possibility of a wide dissection of the pelvis and isolating of the ureters.

The persistent work of Wertheim (beginning in 1897), Dœderlein, Bumm, Proust and others developed an operative procedure which, though difficult in its performance and taxing the strength of the patient, can be regarded at the present time as safe as any abdominal operation performed for a serious abdominal disease. The mortality has gradually decreased from 20-30% to 10-12% and less. The last report of Bumm's clinic gives 60 cases in whom the broad ligaments were not at all, or only slightly, infiltrated, and showed only four deaths, or a mortality of 6.6%. Childe reports recently under twenty cases a primary mortality of 5.5%.

With the decrease of the primary mortality there could be noticed at the same time an increase in the operability and improvement in the end results of the operation.

Krœnig and Dœderlein report 20% cured.

Bumm, in 218 cases, of which 153 were operated, 26% cured.

Clark in 36 cases has five cases cured.

Wertheim, 800 operated cases, 42% cured, and if the patients who died are excluded—53.5%. If all cases are counted 20% cured.

Faure reports an operability of 70.83%.

Berkeley, London, 63% operability and 25.4% cured.

Bonney, 25.9% cured.

My own experience extends over a rather limited number of cases, forty-three in all.

1908-1909, Thirteen cases, rather advanced type, were

operated, of which three died, three were temporarily improved, six were free of symptoms for one or two years, one living.

1910, One case, which died two years after operation.

1911, Five cases: one died following the operation; one died eighteen months after operation; two living (nine months ago); one not located.

1912, One case, living (nine months ago).

1913, Ten cases: two died (primary mortality); one died one year after operation; one died four months after operation; one not located; three well.

1914, Eight cases: one primary mortality.

1915, Five cases: one primary mortality.

In the cases operated by me Bumm's technic was used with slight variations. The patient is prepared in the usual way for laparotomy. The abdominal walls are disinfected with benzin, or ether and iodin. The vaginal preparation varies with different operators, some, as Krœnig and Dœderlein, will not employ the method of curetting the breaking down parts of the cervix, as they fear dissemination of the carcinoma. Bumm advises curetting the breaking down carcinomatous tissue, cauterizing with the thermocautery and application of 5% solution of nitrate of silver to the vaginal mucous membrane, and packing of the vagina with antiseptic gauze.

In my own cases the breaking down tissue was curetted, cauterized by heat and the whole surface and vagina disinfected with alcohol and iodin, after which iodoform gauze was introduced into the vagina. The abdomen is opened by a median incision from the symphisis to the umbilicus. On account of the danger of soiling the cut edges of the wound with carcinomatous masses the wound is protected with towels or gauze pads. The intestines are held back by the same means, which prevents soiling at the same time.

A large abdominal retractor, preferably Stœckel's, is required to expose the field of operation as thoroughly as possible. The uterus is grasped with a blunt tumor forceps and drawn to the symphisis. The spermatic vessels on both sides are cut between two clamps and preferably tied at once. The broad ligaments are opened by an incision following the round ligaments and along the vesico-uterine fold of the peritoneum. The round ligaments are next cut and tied. Now follows the blunt dissec-

tion of the connective tissue of the broad ligaments with finger and forceps, exposing the deep vessels and ureter. The uterine vessels must be isolated crossing the ureter and can now be easily tied and divided. It was advised by Bumm to avoid the superior vesical artery on account of possible circulatory disturbance of the bladder mucosa, but Proust and Maurer have recently, International Medical Congress in London, advised to ligate the internal iliac and have observed no influence on the bladder. After the arteries are tied the ureters are dissected out down to the bladder.

Now comes the removal of the parametria as extensively as it is possible; the vagina is divided between clamps, or as that procedure is frequently not possible on account of adhesions in posterior cul-de-sac, the anterior wall is incised and then, with great care, on account of the rectum, the posterior wall, either with knife or pair of long scissors. The peritoneum of the bladder is attached to the anterior vaginal wall and the peritoneum covering the rectum to the posterior vaginal wall to stop bleeding and cover the open spaces with peritoneum. The open spaces of the broad ligaments are in the same way covered with peritoneum by suture.

If there is no bleeding drainage may be omitted, but in doubtful cases, or where raw surfaces are present which cannot be thoroughly covered, gauze drainage for a few days is indicated. Iodoform gauze is placed in the vagina to support the vaginal vault. The abdominal wound is closed in the usual manner.

III.

THE LIMITATIONS OF THE USE OF RADIUM IN CANCER OF THE UTERUS.*

By C. JEFF. MILLER, M. D., F. C. A. S., New Orleans.

Certain definite scientific knowledge has been obtained regarding the influence of radium on the cancer cell. It has been proven that it has the power of positively checking cell multiplication and that its action is greater on cells of malignant tumors than upon normal physiological cells.

Russ, of the Middlesex Hospital, Cancer Research Institution, states that he has satisfied himself that the power of radium

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emanations over the life-history of a cancer cell is twenty times as great as it is over the life-history of a leucocyte. He has also shown that the influence of radium upon the actual life and division of a cell is something direct and works without the intervention of other forces.

Its uses in the treatment of cancer must be based upon this specific action upon cancer cells and the greater resistance of the normal structures.

It is now fairly well-known just what histological changes take place under the influence of radium and, in order to be brief, I quote at length the condensed statement of Schmitz, who, in a recent exhasutive review, sums up the opinions of various authorities as follows:

"During the first three weeks a hyperemia and numerous typical and still-more pronounced atypical mitoses are found. Then follows the metamorphosis characterized by an enlargement and vacuolization of the cancer cells, retardation, and finally cessation of the division of cell nucleus, then destruction of the nucleus and cell protoplasm and finally destruction of the cells.

"There is a simultaneous new formation and increase of the connective tissue succeeded by a sclerosis and hyaline degeneration of the fibrillæ. On microscopical examination of a piece of tissue, a narrow zone of necrotic area of tissue is seen on the surface, beneath this a layer of granulation tissue and degenerating cancer cells, while in deeper tissues areas of apparently normal and degenerated cancer cells are seen.

"Whether these cells are capable of proliferation or are destined to perish cannot be proven on microscopic examination. The destroyed cancer tissue is replaced by granulating or sclerotic, hyaline degenerated connective tissue. The musculature atrophies and disappears almost entirely. The blood vessels show a hyaline degeneration of the adventitia and media. An obliteration of most of the blood vessels is caused by a proliferation of the intima.

"The changes in the blood vessels are considered by most authorities as of great importance, on account of the sudden disturbance of the nutrition of the tissues."

This statement expresses fairly accurately the action of radium upon which its therapeutic action is based.

We must acknowledge that its action, so far as it goes, produces the result desired in the treatment of malignant processes. Whether its intensity can be increased by the use of larger amounts of radium element, or by different methods of screening, or when combined with other agencies, is one of the problems of the future.

We can at least say that it has a definite action upon cancer cells, and that within a short time its place as a therapeutic agent will be definitely known.

It has been the fashion of late in some high quarters to unreservedly condemn radium and to even say unpleasant things about the intelligence and moral rectitude of those who use it. This spirit has been naturally prompted by our skepticism of new cures, and to a large extent, to some of the unfortunate notoriety it has attained. It is worthy of reflection, however, whether or not the surgeon who condemns without experience is not capable of doing as much harm as the enthusiast whose claim may be extravagant.

I wish to emphasize in the beginning that I am not over-enthusiastic as to the virtues of radium. I have, however, faith in its virtues, and I use it because I have an ample proof that it is a most valuable adjunct in the management of cancer.

The results I have obtained have not altered in the slightest degree my belief that surgery offers the only proven cure for cancer in its early stages.

My belief in the radical operation for cancer of the uterus remains unshaken, but my ardor for extensive operation in advanced malignant processes is decidedly cooled. Those of you who have kept pace with the history of the technic of radical hysterectomy can recall very vididly the extravagant claims made as to its results and how these have been gradually modified.

The patient pays a frightful price for radical hysterectomy, when the primary mortality, the percentage of recurrence, the possible bowel, bladder and kidney complications are all tabulated, and there is just as much danger of bringing the radical operation into disrepute by employing it indiscriminately as will follow the application of radium without proper restrictions and accurate knowledge of its effects and risks.

After we have selected from one hundred cases of cancer the number suitable for radical operation, what is to be done with the remaining forty to sixty per cent that demand treatment? Many of these cannot be subjected to operation, often because of conditions apart from the cancer.

There are other arguments, if time permitted, to prove that radiation in some form has a decidedly large field in cancer management, but it is hardly necessary to introduce them here.

Radiation is being used by reputable, scientifically trained laboratory workers and clinicians who have produced ample proof that it has a place in our armamentarium and gives results that

are not produced by any other known medicament. If, therefore, it is used with discretion, without violating any of the already established facts of surgical or pathologic practice, what reason can be given for its wholesale condemnation? I believe that it can be definitely shown that in the light of recent results the surgeon is not justified in relying upon surgery alone in the treatment of a cancerous lesion any more than he can make an early diagnosis without the pathologists' assistance. He has in radium and the X-ray two of the most powerful agents for preparing a case for operation and in destroying, after operation, overlooked cells and indurable structures.

I have had the good fortune to witness a demonstration of specimens of cancer of the stomach, all of which has been histologically verified, by Prof. Aschaff, of Frieburg, which showed at autopsy that the original growths at the pylorus have been entirely cleared of cancer cells by the use of deep X-ray exposures. This left no doubt in my mind as to my duty in future cancer operations if the patient could employ the use of radium in deep structures and the X-ray properly administered when large areas should be radiated.

It is only fair to state just here that there should be no spirit of rivalry displayed between the exponents of the Roentgen ray and the users of radium. They should be used in conjunction, often quite in the same case, at the same time. That radium can be used in deep-seated growths to a better advantage than the X-ray no one can deny; that there is any specific qualitative difference between the clinical action of X-rays and radium is no longer questioned. The chief advantage of radium, however, lies in the fact that the gamma rays are far superior to the X-rays in the intensity of the penetrating action. This intensity is about forty times stronger than that of the hardest X-rays. Clinical results prove this, and the lesser intensity of the Rœntgen rays cannot be overcome by an increased duration of their application (Schmitz). Since the value of the intensity of radium emanation is universally admitted, and inasmuch as it can be easily introduced into cavities and deep structures without any risk whatever of affecting the tissues lying superficially to it, radium is given thereby a decided advantage over X-rays.

Radium is particularly adapted to the treatment of uterine cancer for this reason, and if we accept Pinch's statement of

its use at the London Radium Institute, it continues to yield the most gratifying results, and the effects of radium treatment in operable cases are far in advance of those obtained by any other known medical or surgical methods.

Since I am requested to speak from personal experience, I must admit here that I cannot give you any data of its use in operable cases. As I have already said, I prefer to operate on all cases that seem to justify it. My experience has been confined to all grades of hopeless, inoperable growths. I regret that I have not accurate notes of all the cases treated to present to you, but I can state fairly accurately what changes have been noted.

I have been able to control hemorrhage in every case, with but one exception; unless the infiltration has been very extensive pain has been promptly relieved. This is one of the most constant and surprising results of its application. I have been able to dispense with opiates within forty-eight hours after its application, and the putrid discharge often disappears as rapidly.

We often fail to appreciate that the septic feature of sloughing growths is the factor that rapidly reduces the patient rather than the extension of the cancer. It is most gratifying to witness the marked improvement in the general condition of the patient as soon as the sloughing subsides under radiation.

The primary action of radium in cancer is really beyond the hopes of its most enthusiastic exponents; if the end results would prove as satisfactory its value would be immeasurable.

These results have been accomplished in inoperable cases, without the use of the knife, anesthesia, curettage, or the actual cautery. This is a distinct advantage to cases that must go to the operating table one or many times with all the accompanying discomfort with the minimum of relief.

DISCUSSION.

DR. F. W. PARHAM: I have had no personal experience with the treatment as described by Dr. Clark, but have observed some of his work. I must say that I am decidedly impressed with its possibilities for good. The advantage of treatment by shutting off the circulation by ligature, and the application of a degree of heat, sufficient to destroy cancer cells and yet far below that likely to injure normal tissue, appeals strongly to me. I have had some experience in similar conditions in surgery of the mouth, in the area of distribution of the external carotid artery. Dawbarn wrote some years ago the Alvarenga prize essay in which he reports many cases benefited and some actually cured by the starvation method, accomplished by dissecting out the external carotids. I remember a striking case of my own, one of carcinoma of the tongue, inoperable at first. The external carotids were

tied. The tongue filled the mouth, presenting a foul mass that certainly defied any operative procedure. Six weeks later the tongue had so much improved that I was able to remove it at the hyoid bone, without having to ligate a single vessel.

As regards radium, I have little experience. In one case of cervical uterine carcinoma, decided by Dr. Miller and myself to be inoperable, distinct benefit was accomplished by twenty-two hour applications of radium several weeks apart. The disease was certainly held in abeyance and she was made very much more comfortable. What the ultimate result will be we are not in a position at present to predict. Certainly the temporary effect was most striking.

I believe that in radium we have an addition to our armamentarium of great value. With its first introduction some years ago I questioned very much its real value, thinking it would prove like so many other agents, introduced with much praise and promise, and when put to the test of time be shewn to be of only apparent or questionable value. In this conclusion I was agreeably disappointed. Several cases in the last few years have forced me to take an interest in it. One case more striking than the others occurred last year. A young man with round cell carcinoma of the chest wall was operated by me with recurrence several months later. The growth, which was about six inches across, had been very thoroughly and widely removed, and the wound then treated with the cautery. A rush diagnosis was later confirmed by laboratory report. The recurrence which occurred in situ was rapid and extensive. He went to Baltimore and remained under treatment several weeks. Upon his return he reported to me for examination; the site of the growth was entirely healed and has remained so up to this time, nearly one year since the treatment.

Following this and other experiences I became convinced of the value of radium and was negotiating for a working quantity for myself when Dr. Miller kindly offered to associate me in the use of that which he had recently obtained. Since then I have had occasion to use it repeatedly and have obtained many highly satisfactory results. One very striking case was a woman near the menopause, with a sub-mucous fibroid; hemorrhages had been profuse and constant and she was extremely exsanguinated, being constantly confined to her bed with frequent fainting spells, pulse rapid and feeble, slight nausea and vomiting, hemoglobin 30%, clearly not a favorable case for operation.

In addition to these objective symptoms there was constant pain in the pelvis. I declined to operate but suggested radium. Three applications were made into the uterine cavity during a period of four days After a few days all hemorrhage stopped and she began to recover quite rapidly from her exsanguination. Two additional intra-uterine applications were made later to make sure of our results. This has been several months ago and she has had no hemorrhage since. All pain in the pelvis ceased twenty-four hours after the first application. The uterus at the time the treatment was instituted was about as large as a four months' pregnancy; it is now about the size of a lemon.

The above results have been duplicated in other cases and I am yet to see a case of uterine hemorrhage which it will not control. In radium we have a potent agent of unquestionable value when intelligently used.

DR. E. S. LEWIS: My experience with inoperable cancer of the uterus is disappointing. In 1880 I wrote a paper on the treatment of such cases, by removing with curette, knife and scissors all diseased tissue and as much of healthy tissue as was possible, following this by packing the crater-like cavity resulting, with pledgets of cotton saturated with a 50 per cent. solution of chloride of zinc. General as well as local improvement was the rule. In a very few instances a permanent cure resulted. These were the rare exceptions, however, for in from a few months to three years the disease invariably returned. With Dr. Clark's application of the Percy method, I have no experience. It is certainly heroic and I hope from it a higher percentage of cures may be recorded. I must confess, however, to being very skeptical. I may say the same of the radium treatment. In a recent report to the French Association for the study of cancer by a committee composed of Messrs. Delbet, Herrinschmidt and Moquot, it was stated, after a thorough investigation, that radium accomplished no more than other methods of treatment. It may be interesting to the members of this association to know that the first vaginal hysterectomy for cancer of the uterus in this country was performed in New Orleans by Dr. Dubourg, Chief Surgeon of the Imperial Guard. He emigrated to New Orleans after the downfall of the first Napoleon. He reported three cases which were published in 1830. I gave this report to Dr. Engleman who was writing a history of hysterectomy.

DR. L. J. GENELLA: Some of the speakers tonight have laid special emphasis on some statistics that claim that the operative treatment of malignancy is better in Europe, in so far as cures are concerned, than it is in America. If this were true I do not believe such data have any bearing on surgical facts unless such averages of cures are correlated with the well-known low cancer incident of such countries. It is a well-known fact that countries that have a low cancer incidence have also a higher rate of cancer cures by almost any method. I believe that even if such master operators as the Mayos were to do their work in a high cancer incidence territory like Iceland, Japan or Greenland, that their per cent of cures

would reach a markedly lower level than it has in such a favorable soil as the Swedish settlement of Minnesota.

No subject is more inviting to the research worker than malignancy, but the present type of research work shall always be barren of results. This barreness is due to the fact that all research workers have their mono-etiologically-factor hobby and they usually blindly ride it to a barren end. The only theory I believe is tenable is to consider a malignant cell as an ostracized cell that has taken on an independent existence after it was ostracized by the other cells. This independent existence or fetus-like type was assumed to avoid the inevitable death that would otherwise have overtaken it after it was ostracized. The causative factor that causes ostracization may thus be infection, trauma or inherited properties. Think of any event that can cause a cell to lose its environmental correlation with normal cells, that will cause such normal cells to ostracize the damaged cells and such ostracized cells must at once either do one of three things: die, revert to normal and normal correlation or take on a self-supporting existence (fetal form of cell). Most cells die, a few revert to normal and a still fewer number are able to assume the fetal type.

DR. MAURICE J. GELPI: It has been my good fortune to be able to observe the cancer work which is now being done in Dr. Clark's clinic, and which is giving the surprisingly good results of which you heard him speak.

I have seen cases treated by means of superficial singeing with the Paquelin cautery; by the application of 50 per cent zinc chlorid paste; by a more thorough cauterization with the soldering irons; by means of intravenous infusions of colloidal copper; and finally, by the X-ray. Of all these things, the treatment by combined internal iliac ligation and Percy cauterization, is the one which up to the present time has given unquestionably the very best results.

The combined plan of treatment is correct not only from the practical, but from the theoretical standpoint as well. By working from below, applying the cautery at 120 degrees, you have the heat transmitted for about one or two inches in every direction. As a result of this you produce an immediate cancer cell death and a subsequent cancer cell starvation, due to thrombosis. By the ligation done from the abdominal side, you produce an immediate cell starvation plus the other results already enumerated by Dr. Clark. The full extent of this starvation can be appreciated, when you consider that in tying both internal iliacs and one ovarian, the circulation of twenty-five arterial trunks is immediately stopped. So that the plan of treatment advocated here tonight is attractive from the theoretical side, and, practically, gives excellent results.

DR. WILLIAM KOHLMANN: In the past three years I have combined X-ray with operations regularly, though I had used X-ray at times previously. I am of the opinion that X-ray has a decided beneficial influence in the after treatment of carcinoma of the uterus.

In regard to Percy's method of cauterization, I believe that the ligation of the internal iliacs and ovarian arteries will be a great help. In some cases though it may be rather difficult to ligate the internal iliac on the left side, as the sigmoid may reach low down and necessitate a more extensive dissection.

The reports of the effect of radium on carcinoma have been more satisfactory, especially recently. The influence seems to depend greatly on the quantity of radium used. Shauta of Vienna found by the use of 40 to 50 mg. rather an increase in the growth. After he was using larger doses his results have been better.

DR. H. W. KOSTMAYER: It is not as inappropriate for me to follow Dr. Lewis in the discussion as it might appear, for it was he who taught me my first steps in gynecology.

I rise principally to tell you that Dr. Clark is not alone in his enthusiasm for the new method of treating cervical carcinoma. Each and every member of his staff is just as enthusiastic and hopeful of ultimate brilliant results.

One great advantage of the Percy cauterization over radium, which was not mentioned, is the fact that radium makes more vascular and difficult later extirpation, whereas the cauterization and vascular ligation greatly facilitate total extirpation.

Dr. Couret said epidermoid cervical carcinoma is the more malignant. This may be true to the pathologist, but the glandular internal type is clinically more malignant because symptoms appear later in this type.

DR. J. F. OECHSNER: I would like to ask Dr. Clark why he left an ovarian artery unligated; it seems perfectly safe to ligate both ovarians, as hardly much could be expected from the one ovarian left.

DR. E. C. SAMUEL: Dr. Miller said that the gamma-ray had forty per cent more penetration than the hardest X-ray tube found. This was true up to about one year ago, when Mr. Coolidge announced his tube to the profession and which he claims gives us practically the same penetration as the gamma-ray. When Rœntgen announced the properties of the ray to the medical profession it was used for practically everything in medicine and surgery; it was in other words a cure-all.

The principal things that we have to pay attention to in X-ray treatment, especially the massive in deep therapy, is the dose that the skin receives. I think that the combination of radium and X-ray is the ideal method of treatment in all postoperative cases of malignancy. It is a well known fact when it comes to choosing between the two methods that some cases respond better to radium and some cases better to X-ray.

DR. S. M. D. CLARK (in closing): I think that ligation of the internal iliac arteries and one ovarian artery, combined with Percy cauterization, is a distinct step forward in the management of cervical carcinoma; but if it can be demonstrated that radium does the work, no one will be more ready and eager to accept it than I. The only way to determine the value of the methods now employed, is for each man to keep accurate records of his cases. At the end of a five-year period that method should be adopted which shows consistently the best results. Some day the specific cure will be found. In the interim we must use the means at our disposal to the best advantage. In this method we believe we have found the most satisfactory plan of treatment yet devised, and are hopeful that at the end of five years our statistics will demonstrate that it accomplishes more than we now assert.

CANCER OF THE LARYNX.*

By HOMER DUPUY, M. D., New Orleans, La.

The advisability and legitimacy of surgery in a region of the body where manifold and formidable dangers surround the operation itself must finally rest upon the answer given to the three following questions:

1st. Is a permanent cure possible?

2d. Can the risks of the operation *per se* be reduced?

3d. How much permanent disability will result from the operation?

When, in 1874, Billroth performed the first laryngectomy for cancer, the larynx from that date ceased to be a surgical "touch-me-not." While the death-toll from external operations about the larynx has been a heavy one, statistics bear witness to a markedly decreasing operative mortality rate.

Equally convincing and encouraging is the record as to the ultimate cure of laryngeal cancer following operation.

While we are lacking statistics in complete form, the medical press permits a summary from 1874, when the ultimate cures with operation were only 8%, to the year 1901, when the cures were passing the 66% mark.

Gluck's brilliant achievements show the following results: 35 hemilaryngectomies, 3 operative deaths; 22 total laryngectomies, 1 operative death.

Semon and Butlin summarize their results in thyroitomies for purely intrinsic cancer of the larynx as 85% of permanent cures, there being no recurrence within three years. Our own Crile has established a new standard in this country with a

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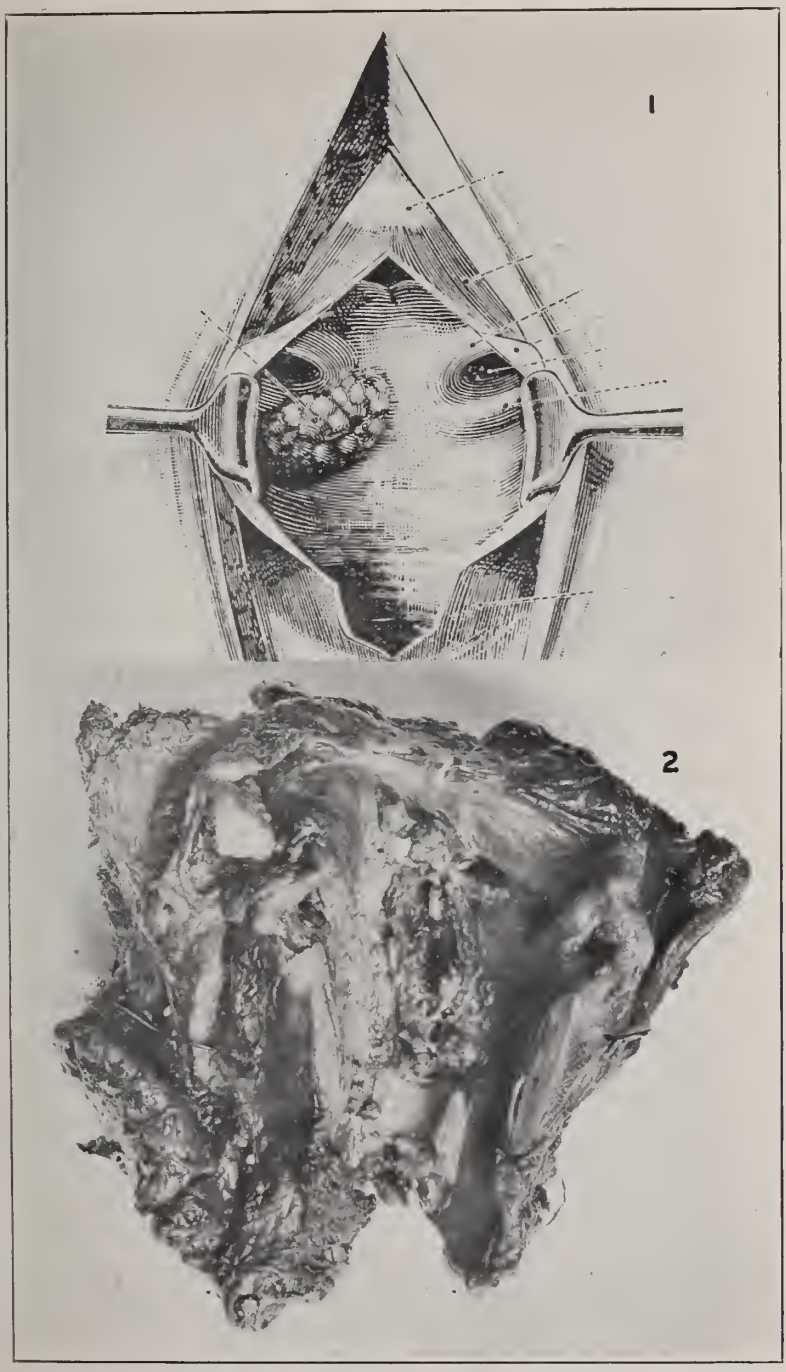
record of twenty-seven laryngectomies for cancer, with only two operative fatalities, a mortality rate of 7%. Surely, such records give encouragement and inspiration. While an improved surgical technic and a careful post-operative treatment has obtained, the division and recognition of two clinical types of laryngeal cancer is equally responsible for these splendid results. This classification into two clinical types, intrinsic and extrinsic, is not generally recognized. It is of practical importance to grasp the significance of such a division if we would fully realize the difference in the pathology of cancer as it originates in different parts of the larynx. Again, the recognition of these two forms makes early diagnosis imperative, as the intrinsic is both operable and curable, while the extrinsic still presents a gloomy outlook.

The intrinsic type includes cancer affecting the true vocal cords—the false vocal cords—and the ventricles. Its essential feature is that the growth in these positions remains for a long time within the cartilage box, showing no tendency to involve the outside framework of the larynx. Extended observations show that when the cancer is limited to these parts glandular infection and metastases are extremely rare and only occur as late developments. The one explanation for this extraordinary exemption from lymphatic involvement is the proven sparse lymphatic supply within the larynx. In the area described as intrinsic the lymphatic system, as is demonstrated by Sappy and Poirrier, is of meager proportions. This anatomical feature explains the feeble power of invading neighboring structures manifested by the intrinsic cancer.

In such an environment the growth may be said to be "in a safe deposit box." If the case is delivered over to a surgeon early enough, with our present improved operative technic, the intrinsic laryngeal cancer should prove the most curable cancer of the body.

In the extrinsic type the growth originates in the epiglottis, or in the region of the arytenoid, on its upper and posterior surfaces of the arytenoid cartilage. From these points dissemination through an abundant lymphatic supply to neighboring structures is rapid and extensive. Metastases subsequent to operation is the rule. This extrinsic form offers insuperable



1—Intrinsic cancer of larynx involving right false vocal chord.
2—Intrinsic cancer of larynx; become extrinsic by perforating wings of thyroid.

ILLUSTRATING CASE OF DR. DUPUY.

difficulties to surgery, and recurrence is more frequent than otherwise.

When intrinsic laryngeal cancer perforates the wings of the thyroid cartilage, it clinically and surgically enters into the extrinsic class.

It is evident that the cure, in a great measure, hinges on early diagnosis. While the cancer remains encapsuled in the larynx is the time to make a diagnosis. As the neoplasm usually first attacks the true vocal cords, hoarseness—in varying degrees—quickly follows. Hoarseness always needs a diagnosis. The cause of it, and its persistence, in subjects of the male sex past forty years, is sufficiently compelling to call for an early laryngoscopic verdict. True it is that at the onset some difficulties may beset us. In the absence of distinctly visible neoplastic tissue, and in the presence of mere infiltration, we will have to suspend judgment for a while. But in this region the highly suspicious features of unilateral tumefaction—early immobility of the cord affected—soon reveal themselves. At this stage the microscope affords little or no assistance. In more advanced cases, however, the microscope seldom negatives the clinical picture.

In its very incipiency the chief characteristics may be so ill defined that we are thus driven to differential diagnosis, and the two more frequent possibilities which confront us are tuberculosis and syphilis. The former is rarely, if ever, primary, and in arriving at a positive conclusion, the tuberculin test seems reliable.

Regarding syphilis, it must be emphasized that a luetic laryngeal lesion is a potential cancer. While the local lesion may disappear under appropriate treatment, the residual cancerous growth continues to advance. Herein lies the danger of too long deferring operative measures for the cancer in the hope of curing what is thought to be latent syphilis.

In extrinsic cancer the onset is insidious, and there is no hoarseness to warn us, while the dysphagia sets in when the disease is quite advanced.

With reference to benign growths and their recognition, the training and experience of the expert laryngologist usually affords security against mistaken diagnoses. I have seen a

tuberculoma—of postcommissure—simulate a papilloma. Refinements in diagnosis sometimes prove necessary.

The special regional dangers surrounding extensive operations about the larynx are:

1st. Pneumonia—due to inspiration of blood and inhalation of infected discharges from the wound.

2d. Mediastinal infections.

3d. Vagitis—caused by injury of the vagi during operation.

4th. Reflex inhibition of the heart and respiration through mechanical stimulation of the superior laryngeal nerve.

These are the obstacles that have blocked our path to complete success. We can, however, look with more hope into the future, as such master workers in the field as Gluck in Germany—Semon and Butlin in England—Brewer, Jackson and Crile in America—have, by a refinement of technic and scrupulous postoperative care, greatly minimized these ever-present risks.

Naturally, I have turned to our own records of the Charity Hospital. It must be admitted that they are not encouraging relative to surgery of the larynx for cancer. Dr. Matas, however, has one case to his credit deserving mention, a combined laryngectomy and partial pharyngotomy for a very unfavorable case of extrinsic cancer. The patient, with buccal whisper, was up and about for several months after the operation. He has left the hospital, and it is not known whether he is still living. One of my cases, a left hemilaryngectomy, was apparently cured for over one year, when a recurrence in the right half of the larynx caused a fatal issue. My last laryngectomy on a male subject, aged forty—poor general health—resulted in death in twenty-four hours after the operation from sudden cardiac failure. The discussion of this paper may bring out more fortunate results than is here recorded, from those who are interested in this field of surgery.

What is the price paid for the cure in permanent disability when laryngectomy is done? Unquestionably a very dear one. Artificial devices for the production of voice, all authorities agree, except Gluck, are at best unsatisfactory and impracticable. The mutilation is of such serious character that the patient alone must decide his fate when the question of operation is being discussed.

What is the last word in operative measures? Thyrotomy—

advocated and practiced by the English laryngologists, headed by Semon—is regarded by them as *the* operative procedure for all cases of *intrinsic cancer*. Opening the larynx in the median line certainly gives a wide exposure of the parts and makes it surgically possible to remove the entire growth when it is limited to the soft structures. While the growth is usually found to be more extensive than the laryngoscope had shown it to be, seldom, if an early diagnosis had been made—is it necessary to remove any of the cartilaginous framework. The statistics of the English laryngologists emphasize that in rigidly suitable cases thyrotomy, combined with tracheotomy, is a comparatively safe operation. There is less mutilation and some voice is preserved when the disease is unilateral.

It is regretable that the selected cases suitable for thyrotomy are not presenting themselves in greater numbers. The cases, as we see them, are too advanced. Somebody is erring, somebody is delaying a much needed diagnosis. It does seem that thyrotomy is full of promise for the most frequent type of laryngeal cancer, the intrinsic. But it is not being given a chance to prove, perhaps, its superior merits over other more radical operations. So the pendulum in recent years is swinging over to complete laryngectomy, and this operation is becoming more and more highly specialized.

The ideal now aimed at is to safeguard the mediastinum, and pulmonary tract, by a preliminary operative procedure which strives to produce a strong barrier of granulation tissue around the larynx and trachea before final removal of the former. Briefly stated, this method of preoperative protection consists in the exposure by dissection of the upper trachea, the larynx, and the lateral planes of the neck. A low tracheotomy is then performed. It is expected that in about one week a sufficient amount of granulations will be produced to act as a defense against any infection extending across the base of the neck or into the thoracic cavity. A strong defensive mechanism will also be established in the mucous lining of the trachea, which will have to care for itself through an artificial opening. At the end of one week the larynx is removed by the usual technic.

This procedure, credited to Crile, promises to still further reduce the operative risks of laryngectomy. I had the privilege of seeing Dr. Matas perform this operation on a subject referred

to him from my service at the Charity Hospital. I have already referred to the case in another part of my paper. The case was not a suitable one, as the cancer extended from the larynx to surrounding structures. I was, however, greatly impressed with the possibilities of this method for the reduction of those life-destroying post-operative complications which seem to thwart the best efforts of some of the most skilled operators.

DISCUSSION.

DR. A. I. WEIL: The outlook in cancer of the larynx, from the patient's standpoint, has been greatly improved in the past few years. This is largely due to the introduction of the suspension laryngoscope of Killian, by means of which the patient can be suspended and a direct view had of the larynx. This greatly facilitates an early diagnosis, the sine qua non of successful treatment of cancer of the larynx. As large a piece as is necessary for complete microscopical diagnosis can be much more comfortably removed by this method than by the old indirect method; and it is possible to secure the tissue from the exact spot and in the exact amount desired. Nor is it necessary to wait weeks and months to rule out tuberculosis and syphilis.

A diagnosis of malignant disease having been made, the important question then arises, shall we attempt to remove the growth by means of a thyrotomy or shall we try for complete eradication by means of laryngectomy. My experience has been that a thyrotomy is never sure, and my preference is for the radical operation in spite of the increased risk and the resulting complete loss of voice. In the operation as at present performed, that is in steps as suggested by Crile, the risk of complications is lessened.

If the radical operation is rejected, I think as much can be accomplished with the suspension apparatus as by thyrotomy and with much less risk and discomfort to the patient.

DR. DUPUY (in closing): I did not intend in my paper to advocate either laryngectomy or thyrotomy. The brilliant results, however, reported by the English laryngologists with thyrotomy for strictly intrinsic laryngeal cancer warrants a more extended experience in this country ere we allow the pendulum to swing over entirely to that mutilating procedure—laryngectomy. Either method calls for early diagnosis. The burden of responsibility rests on the one who first sees the case. The laryngoscope is ready to make a diagnosis—and surgery, in the intrinsic type, is full of promise as to a permanent cure of laryngeal cancer.

EXPERIMENTAL AND VIVISECTIONAL RESEARCHES, WITH MINUTE CHEMICAL AND PATHOLOGICAL OBSERVATIONS.

When and How Does the Pre-cancerous State Become Cancerous?—Is It Stimulation, Degeneration or Regeneration?

By FREDERICK GAERTNER, A. M., M. D., LL. D., Etc., Pittsburg, Pa.

The production of cancer from a pre-cancerous lesion is more of an accident than a sequence. Its transformation is not a metamorphosis of the existing diseased tissues, but a supra-activated, aggressive process of its underlying highly stimulated normal tissue, due to loss of ferments to defend the underlying cells against foreign, or toxic protein products; in other words, an excess of pathologic, nitrogen lymph. This is backed up by the finding of an increase of non-coagulable nitrogen in the blood and an increase of colloidal nitrogen in the urine of cancer subjects—finally, cancer toxemia, and death is due to

uremic "nitrogen" poisoning. Recently the chemical studies of Rous' serum in chicken sarcoma has verified the excessive nitrogen infiltration.

Besides, I have clearly shown "vivisectionally" on animals the very beginning of mammary cancer; also demonstrated from human cancer "pathologically" that cancer cells can be transplanted, whereas normal cells, under like conditions, will not grow; this proved to be due to the cancer-plant carried "intrinsically" sufficient cancer stimuli, so do embolic masses in metastasis. Furthermore, the staining of cancer antemortemly by injecting coloring material into the subtumoral efferent vessels, and the production of cancer, artificially, by nitrogen stimulation, fully corroborate my assertions.

Pathologists and surgeons alike will bear me out that the very beginning of every cancerous growth is a local condition —whether caused by trauma or pre-cancerous lesion is immaterial—but decidedly more complicated and manifold than the mere cell proliferation, nor an atypical cell accumulation—neither the infiltration or invasion of young fibro-blasts, connective tissue cells, lymphatic cells, leucocytes and polymorphonuclear cells, even to the extent of regional lymphatic infiltrations; all this does not necessarily spell cancer, however; plus an obstruction, *i. e.*, engorged and disorganized lymph stagnations, which have lost all intrinsic oxidizing qualities, also robbed the proximal cell of its intra-cellular oxidizing activities, and necessarily changes its interstitial auto-intoxication to a histogenetic (biochemically morphosed), pathologic-nitrogen lymph. This has already been verified by noted European pathologists. I went one step further and demonstrated that the greater the density of its interstitial and intercellular tissue juices, the greater its endosmotic pressure, and the greater its concentration, the more frequent its particles remain inactive; but the greater its dilution, the more complete the disassociation of its particles and the greater the degree of ionization. In other words, if we withdraw the water to a minimum, the tissues become drier and the combustion of nitrogen increases; therefore, any alteration in endosmotic pressure through increase in density of the fluids of the interstitial tissue affects the volume and shape of the cells and especially its intracellular constituents.

It is an acknowledged fact that protoplasm (bio-protein, Muller) physiologically possesses assimilatory and osteogenetic properties of tissue regeneration. Its chemical base is nucleinic acid, which has a tendency of excreting large quantities of nitrogen and organic phosphorus.

The most recent research, having for its object to determine upon the problems of the ultimate vital actions in the formation of the blastoderm and protoplasmic nuclei, led us to the selection of nucleinic acid, and is endorsed by the ablest physiologists and embryologists. Mierscher, who discovered the nucleins and obtained a proteid substance extremely rich in phosphorus, regards the zoosperm as the prototype of the organized cell, and he succeeded in isolating from salmon roe an acid body presenting none of the reactions of proteid matter, viz: nucleinic acid —an organic, chemical compound, which, in combination with proteid, constitutes nuclein. Schmiedeberg (one of my teachers) established the formula of nucleinic acid, *i. e.*, containing 9.63 organic phosphorus, or $C_{40}\ H_{54}\ N_{14}\ P_4\ O_{27}$. Loewi has scientifically demonstrated that from nucleinic acid with its large proportion of organized phosphorus are derived the primary elements of protoplasm, protagon, lecithin, neurin, spermin, cholin, etc., as end products, or dissimilation, *i. e.*, excreta, similar to Austin Flint's theory on the formation of cholesterin.

Van Noorden says: *"The intermate action of nucleinic acid is not of a chemical nature, in the literal sense of the term. It is rather an action by 'presence'—an example of catalytic force which constrains the cellular nucleus to carry out its duplicating process and awakens promptly and completely the physiological function of its nucleus."*

Danilevsky says: *"Nucleinic acid is, in fact, the specific ferment of normal cellular growth, the biosynthetine, or vital synthesis. Physiological chemistry and the ultra microscope prove its organo-plastic activity, its integrating power on the nuclear stroma, its incomparable influence in the multiplication of the morphological elements of the blood and nervous system by growth and segmentation of the nuclei. Lastly, the marked increase in the nitrogenous exchanges with the assured fixation of phosphorus in the tissues, with its consequence the regeneration of the hemoglobin."*

Physiologically, nucleinic acid is the basic principal of tissue

regeneration. It provides the young cells with the necessary pabulum "nucleins," and the old with intrinsic resistance, *i. e.*, osmotic tension; thereby maintains an interstitial equilibrium, *i. e.*, endosmotic pressure, with autolytic activities. It puts the leucocytes in a state of increased phagocytic activity (Gaucher and Barbier). Nucleinic acid is the active solvent of uric acid, and thereby accelerates the elimination of waste; that is to say, of preventing the reabsorption and waste of the most valuable of its intracellular elements, whereas a total loss of nucleinic acid necessarily changes its functional activity and reproductive regeneration to a pathological atrophy with diminished osmotic tension. However, an increased endosmotic pressure may also produce consequative atrophy; but, where the tissues are loose, flabby and highly vascularized lymphatically, like the mamma, skin and other excretory organs, it oftimes has the opposite effect, producing cell hypertrophy with degeneration, or proliferation from stimulation.

This pathologically elaborated nitrogen lymph in loco permeates and disorganizes the fixed body cells, also penetrates and stimulates the movable cells into hyper-activity, so that the cellular fixed elements by this time have become denuded of intrinsic resistance, *i. e.*, nucleinic acid, thereby making room for an increased mineralization—endosmotically of accelerated gaseous exchanges, with diminished fat-splitting protective elements.

It is here where we find the missing link between the pre-cancerous stage and the cancerous state.

I will not take up your time in reciting the multitudinous pre-cancerous diseases and pre-cancerous lesions leading up to cancer. These have been most elaborately elucidated by Dr. J. Ewing in the *Medical Record* of December 5, 1914, and of other noted carcinomatologists; but still it remains for me to demonstrate scientifically the positive existence of "A Biochemical Cancer Stimulus" which is an excess of nitrogen in a highly toxic protein lymph menstruum and constitutes this increased interstitial density, *i. e.*, endosmotic pressure. *A priori*, this pathologic bridgment in the tissues can be verified by making accurate chemico-microscopical examinations. In nearly every pre-cancerous disease in which its base has already retrogressed cancerously, we find that the endothelium of the capillaries and

lymphatics have undergone proliferation and blocked the lumen of the vessels; further, find the environmental tissues both fixed and movable elements decidedly hyper-active with marked structural changes, *i. e.,* decidedly nourished by a positive quantum of toxic nitrogen lymph, highly alkaline, slightly edematous; *e. g.,* "the greater its toxicity and alkalinity, the greater its colloidal nitrogen stage, and the greater its malignancy." In other words, a growth cannot be pronounced cancerous until we find the characteristic cancer cells, and until we find the environmental toxinized lymph with its neoplastic lymph element infiltrations.

Cancer, like all tumors, originates from the interior of the pre-existing cells, muscle fiber, connective tissue, spindle shaped and round cells, even lymphocytes and leucocytes. All are concerned in the formation of tumors; *i. e.,* the result of intrinsic biochemical stimulations, and its type of malignancy may be determined by the amount of such pathologic stimulants which produces the greatest amount of retromorphosed endogenous tissues, and to what extent the peri and subtumoral masses are infiltrated with colloidal nitrogen lymph, neoplastic toxinized lymph elements, fibroblasts and necrosed cancer debris. *i. e.,* chromatin residues, cell remnants, nuclear and neo-protoplasmic fragments.

This colloidal nitrogen lymph, or cancer fluid, is not absorbable by the blood vessels, except only where necroses have already occurred (and this explains the finding of an increased per cent of colloidal nitrogen in the urine of cancerous subjects). Its composition is highly alkaline, with sodium and potassium salts predominating in a bio-nitrogenous glue-like menstruum. Sp. gr. 1045 to 1085; readily gives off nitrogen, whereas, in toto, it is neither absorbable, dissoluble, nor diffusible, but readily taken up by the dilated lymphatics, especially necrosed blood vessels, and it is my opinion that some of this colloidal nitrogen lymph must be carried along with the metastatic masses in order to form metastases. By injecting this same cancer liquid into the mamma of other non-cancerous animals, rats and mice, I can again produce the characteristic cancer cells.

Cancer cells are not born; neither are they produced directly from the normal cells; neither have they any function nor do they possess any intrinsic resistance; however, marked struc-

tural changes, with poly-typic and atypic proliferations, the contour and shape are largely influenced by increased endosmotic pressure—therefore, prone to absorb more readily than normal cells. It is admitted that cancer cells originally came from the fixed body cells, but they must pass through various successive stages of intracellular, morphological, retro-progressive developments, *i. e.*, from a karyakinetic segmentation to a proliferation, then from an abnormal irregular proliferation to a sprouting process.

The original normal cell, its reticular nucleus that directs and controls the activity of the cytoplasm, contains chromatin, plastin, nucleo-protein, calcium, phosphorus, iron, etc. The cytoplasmic reticulum fibers, continuous with those of the nucleus, are also composed of plastin and calcium. In the reticulum spaces, we have: first, ordinary proteins; second, nucleo-proteins with phosphoric acid; third, calcium combinations; and fourth, proteins in combinations with fatty acids, *i. e.*, lipo-proteins, the lipoids forming the cohesive cement of its intracellular constituents.

One of the most important aggressive, biological and pathological changes is brought about by this toxic hyper-nitrogen infiltration, producing a disorganization of its intracellular constituents, which are thrown into a chaotic upheaval, the nucleus shaken off its very foundation, followed by a marked deficiency, *i. e.*, loss of its intrinsic phosphorus and nucleinic acid, replaced with an increased alkalinity (sodium and potassium salts); *e. g.*, increased diffusibility, whereby a gradual obliteration of its recticulum and lipoids, structurally changed into a disordered nucleo-proteid catabolism—metamorphosed into a synthetic bio-nitrogenous neo-protoplasm. This is particularly noticeable nearest the cell wall, and is the first element that shoots through the already weakened and attenuated cell membrane (see Fig. 4 and 5), by which process the now semi-neo-plastic cellular elements become much enlarged, pale and finely granular, which is not due to degeneration, but to a "nitrogenous" regeneration. In some of the cells the nucleus was still preserved; in others the nuclei became very much enlarged, some scattered, but mostly subdivided, while others have the appearance of being distorted and situated eccentrically, and in many instances it was flattened out into a concave disc, closely applied to the inner cell wall,

which conclusively proved to be due to an over production of intracellular gaseous changes, whilst the cellular elements were in process of crenation, some in mitotic developments—other cellular elements rapidly retrogressed neoplastically, and many of them over-dilated from irregular gaseous vacuoles with pseudo-anaplastic formations, thereby formed into irregular sprouting neoplastic cell proliferation, even giant cells, into cancer colonies, besides a fibrillar network of coagulated lymph. In its meshes were lymph cells, degenerated and disintegrated lucocytes, chromatin residues, and other necrosed cellular debris.

In further advanced growths, I found that the semi-neoplastic cells which originally had as functions to secrete rapidly, became excretory, *i. e.*, cancerous, and were so changed and modified by its rapid proliferation, *e. g.*, intrinsic disorganization with increased osmotic tension, the further production of a most viruient toxic-nitrogen lymph, *i. e.*, endosmotically distinctly colloidal, which affected other cells in their immediate neighborhood. Even the young fibro-blasts, leucocytes, lymphoid; also the spindle shaped and connective tissue cells show increased neoplastic activity, and for that reason a neoplastic fibroid framework is built up *pari passu* with that of the multitudinous cancer cells. It is here where the style, type and form of cancer is moulded, and much depends upon the tissues in and from which it grows. In the mamma, where the loose, fatty and highly fibro-adenoid, with lymphoid, tissues exist, it is decidedly favorable for the invasion, infiltration and progression of the neoplastically stimulated movable cells, especally the young fibroblasts and connective tissue cells are here desperately hyperactive and invariably produce a scirrhus cancer.

Pre-cancerous diseases are not cancer: neither a benign tumor nor an inflammatory over-growth, nor ulceration, is cancer. Any of the above may lead to cancer, but the transformation is decidedly more intricate and complex than the mere changing of an abnormal typical tissue regression to an atypical proliferation. The underlying principle is in the production of a new foreign tissue, decidedly poly-typic and ana-plastic; *i. e.*, a regenerative, endogenous process, as in the old pathological tissues of an ulceration fissure, induration, wart-like hypertrophy, syphilitic lesion, or gumma, leucoplakia, inflammatory enlargement, cyst, or trauma; and in the skin, chronic eczematous patches, sebaceous

tumors, old ulcers, irritating (chronically) cracked lips, and abrasions of the alæ-nasi, especially scar tissue. All of these may precede cancer, but in themselves, like scar tissue, can never transform intrinsically into cancer cells; neither can degenerated nor infiltratd cells become cancer cells, but the pathologically enlarged and diseased tissues and cells must help to convert the underlying protective ferments into a nitrogenous toxic protein product, and as long as the lymph with its circulation has sufficient resisting powers to physiologize with nucleins, the tissue cells, especially endothelium, epithelium, etc., in their growth, repair and functional activities, and especially to collect and carry off tissue waste, cancer can never develop. Should, however, the lymph become pathologic, *i. e.,* stagnant and infiltrated with larger quantities of disorganized tissue, waste, urea and sugar, the result of fermentation and decomposition, with Sp. Gr. of 1045 to 1085—within the already engorged and obstructed lymph spaces and capillaries, superinduced by extra pressure from a pre-cancerous lesion, or other pathologic destructive tissue changes, such as mechanical obstructive indurations, fibrous bands, lacerations, old adhesions, also infarctions, organic-metastatic emboli, even inorganic metastases and syphilitic-infiltrated, penetrating gummata, especially chronic irritations due to congestive, inflammatory cicatrizial tissue infiltrations, cancer may be formed.

This explains the frequent finding of an adenocarcinomatous base in pre-cancerous lesions, *i. e.,* ulcerations, etc., of the stomach and bowels; also the subtumoral neoplastic infiltrations of a benign tumor, and especially the extraordinary proliferating powers of the toxic lymph elements along the peri- and subtumoral masses and peripheral lymph spaces of pre-cancerous diseases.

I have seen a number of cancers of the male breast where its base had undergone suppuration with large abscess formation; then by artificial evacuation a complete and permanent cure was affected. This corroborates two vital points: first, cancer is purely a lymph process. It is started within the lymph spaces and capillaries, nourished by an intoxicated alkalinized lymph, carried and metastasized within colloidal nitrogenous lymph masses. It can never originate in tissues minus lymphatics, nor develop where the lymphatics have been obliterated, but the

more abundantly the tissues are supplied with lymph spaces and capillaries, the more frequent cancer develops. Second: Cancer can never develop in an acid medium.

One of the principal reasons why primary cancer of the kidneys and stomach is rare is on account of the mucous and submucosal tissues being strongly acid, with the exception of its "pylorus," this anatomic "traumatically" exposed tract being well supplied with blood, and decidedly so with lymph and lymphatics. Before primary cancer can develop itself in the above organs, certain gross pathological tissue changes must long have pre-existed, even prior to the pre-cancerous state, such as chronic inflammatory indurations, with necrosis and ulceration, *i. e.*, diminished acidity. However, the finding of certain fatty acids in the outlying districts of cancer of the intestinal tract, also of bone, which cause a decalcification of the latter prior to cancer infiltrations, is due to intracellular destructive changes in which lipoids and nucleinic acid were displaced by increased alkalinity, which either neutralizes the fatty acids or increases them interstitially, through intercellular and interstitial nitrogenized alkaline accumulations, pushes the fatty acids to one side, and further concentrates this toxic lymph into a colloidal nitrogen lymph, which, on account of its intense cohesiveness, intrinsically, heavier in specific gravity and less volatile, is retained within the immediate proximity of the new growth, and thereby supplies an increased amount of cancer lymph.

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N. O. Medical and Surgical Journal

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CANCER.

The propaganda for the knowledge of cancer will receive an enormous support with the July publication of many medical journals in this country. The American Society for the Control of Cancer is responsible for this campaign and this beginning should start a widespread interest in the subject.

The problem in cancer control is of far more importance than cancer cure, for the cure of cancer has been under way a long time. It is the exceptional case of cancer which is not remediable and the means of cure is increasing all the time.

The ignorance of the early stages of cancer and of the predisposing influences has been most responsible for so many bad cases. While the interest of the public is paramount and the education of the public highly important, we are minded to express the belief that the education of the rank and file of the profession is supremely urgent as the general practitioner has it in his hands to fix an early clinical diagnosis of cancer; the control can easily follow, and a cure may be anticipated with early precaution.

It is interesting to observe the wide discussion in cancer therapy, the surgeon on the one hand and the radio-therapist on the other—sometimes not meeting on any common ground.

The very differences in opinion augur an ultimate good, for there must be some cases where the surgeon has no place as there are other cases in which radio-therapy can serve no purpose. The wiser surgeons are beginning to compromise, directing a post-operative X-ray treatment as a means of assuring success in the end results or of, at the worst, minimizing the likelihood of recurrence.

It is too soon to have any arbitrary opinions on either radium or X-ray; even those expert in the use of these agents have modified convictions and it will require a better technic and a wider experience to prove results. Anyone, however, who reads the current reports, must gather the information that radium does well in selected cases and that the X-ray has retrieved the surgeon's failure more than once.

The pathologist occupies a secondary place, just now. Not in the importance of his relation to cancer control, but in the relative importance given him in the discussion. It is the clinical picture and the therapy which are in the limelight, even if the pathologist is so necessary to prove a diagnosis and to prognosticate the final result.

Anyway, it is a spiritual compensation and relief to think that, while so much of the world is at the throats of its neighbors, we in America can find time and occasion to go on with the battle against natural enemies, even though they are so morbid as cancer types.

Such militant forces in our civilization need to be controlled and the medical profession once more is in the fight, bound to conquer in the end, for with yellow fever, hookworm, plague, typhus,

cholera, and malaria already in the list of controlable diseases, we have only to go on fighting to finally relegate tuberculosis, cancer and syphilis also.

Cancer in New England.—Cancer is unusually high in mortality in New England as compared with other groups of states. Te relatively larger proportion of old people is held responsible. The death rate for cancer in the rgistration area of the United States for 1913 was 78.9 per 100,000. Connecticut showed 85.1; Vermont, 111.7; Maine, 107.5; New Hampshire, 104.4; Massachusetts, 101.4; Rode Island, 93.3. This means that 6,817 people died of cancer in New England in 1913.

New England has been awakened to the importance of this condition and the health authorities have begun active propaganda in general education for the prevention of cancer. Public meetings have been arranged and in several ways the dangers will be brought to the people.

Miscellany

WHY WE SHOULD HAVE A WAR AGAINST CANCER

(From the Commission on Cancer of the Medical Society of the State of Pennsylvania.)

It is a fact that cancer kills about 75,000 people in the United States every year. Any disease which causes such a high annual toll should command the careful attention of the Government, the medical profession, and the people. The need for this careful attention is all the more imperative if both the morbidity and mortality can be very largely reduced by co-operation on the part of these three forces, i. e., the Government, its people, and their physicians.

The reduction that has been caused in tuberculosis is now a matter of history. There can be no doubt that similar well-directed and persistent activity would cause a similar effect in cancer.

The key to the reduction of cancer mortality lies precisely in this: That cancer always begins as a purely local disease involving a strictly limited area. Second, that this limited area is accessible in about four-fifths of all cases; and third, and most important. a commencing cancer practically always indicates its

presence when it is still in its early, locally limited, and permanently curable stage. In other words, the enemy that we have to fight is not the cancer, but the delay. Nearly 60,000 of our people die every year, not because they have cancer, but because they have waited till the cancer became incurable.

The causes for delay are, first, that the people know little or nothing about cancer. The layman or laywoman does not know that certain evident signs and symptoms mean that cancer is insidiously creeping on them and will be fatal unless recognized and checked in time. So that a large proportion of our 60,000 unnecessary cancer deaths occur because the people do not know. If a woman has a right to kill another human being to save her own life when attacked, how much more has she the right to know that a fatal disease has begun its attack on her? A woman who loses her life at forty simply because she never knew that irregular vaginal bleedings indicated the presence of a cancer while it was in its early curable stage certainly has not had her fair chance at the hands of civilization. If our people are dying because they do not know, we, the doctors, must teach them. We must teach women that a lump in the breast, no matter how small or how painless, may be the starting point of a serious condition and must at once be investigated by a competent physician. We must teach women that irregular vaginal bleeding, the onset of a discharge, etc., may be early warning symptoms of cancer of the uterus. We must teach all people that a mole or a wart which begins to grow, bleed, or ulcerate, is a danger sign that must be heeded at once. There are similar early signs in other portions of the body that may forewarn people, and of which they should have accurate knowledge.

There is also a great field in the conditions marked by chronic irritation and the so-called precancer lesions. Recent statistics show that in about 40% of cases the cancer, the malignant disease, was preceded by long-continued simple diseases or by some form of chronic irritation. In other words, a large proportion of cancerous people need not have had the disease at all if they had been forewarned and had their precancerous condition cured.

The second great problem lies with us as medical men. Are we as active in the treatment of precancerous diseases as we should be, or do we only too often put our patients off with some

placebo and advise them not to worry? Do we always insist on a thorough examination when a patient comes to us with symptoms that may mean cancer? When an early cancer is present, do we always lay proper emphasis on the necessity for proper treatment at once? Do we not too often advise the one course which can yield to disaster and tell our patients to wait and see what develops, i. e., wait till the cancer becomes inoperable? Unfortunately at the present time these questions must be answered to our disadvantage. A recent extensive investigation has shown that on an average the family physician has had his cases of cancer under observation for about a year before they come to a real attempt to cure the disease. Our attitude to cancer needs to undergo a radical change. The average of one year's observation must be cut down to a few weeks, or, best, to a few days. Immediate attention to the precancerous condition, counsel in the doubtful cases, and immediate action in the positive cases, is the only proper service we can give our patients. To do this, we need a campaign amongst ourselves, too. A new and more efficient spirit must be created which will result in constant watchfulness to keep our patients from swelling the thousands of untimely and unnecessary deaths from cancer.

To arouse the profession fully to the necessities in the war against cancer, a movement has been started by which, during the present few months, State and County Societies all over the country are devoting special meetings to the study of cancer, and in addition, the vast combined influence of American medical journalism has been enlisted, and some forty odd medical journals are providing special cancer numbers. It would seem from the number of journals co-operating that the message must be brought directly to every medical man. We are sure that in this way the interest of the medical profession will be aroused for years to come, and we are sure that the time will be soon at hand when no blame for participation in the fatal delay can ever be laid at the door of an American physician.

The Treatment of Cancer with Autolysates.—Tukenbein (*Munch, med. Woch.*, 1914, lxi, 18) reports remarkable improvement in 15 cases of inoperable cancer following intravenous injection of an autolysate derived from the patient's own tumor. One marked advantage of the treatment is that it acts on both the

primary and the metastatic tumors. The most marked benefit was a prompt and marked relief from pain; this relief was very marked in one case, the pains subsiding in a few hours after intravenous injection of the autolysate, although the pain had previously resisted the acttion of morphin. The author reports the cases in detail, and it is noticeable that the cases influenced by the treatment were benefited in one or two weeks.

Spinal Decompression in Meningomyelitis.—(*Journal of Nervous and Mental Diseases;* Vol. 42, No. 1).—Taylor and Stephenson, as a result of their operative experiences in meningomyelitis, conclude:

1. Selected cases of meningomyelitis are susceptible to surgical treatment, where the findings indicate the segmental level.

2. This treatment should consist in laminectomy, free opening of the dura, and probably incision into the posterior columns of the cord, especially in those cases showing marked infiltration and swelling of the cord.

3. This operation, properly performed, adds very little to the jeopardy of the patient, but, on the contrary, seems to greatly diminish the period of convalescence and to lead to a more nearly normal return of function in the cord than is usual in these cases when treated expectantly. Many surgeons have demonstrated that laminectomy is not a very dangerous operation.

4. Decompression probably acts favorably by causing freer circulation, with the more rapid absorption of the inflammatory exudate. Incision of the cord probably facilitates drainage.

5. The small risk inherent in laminectomy, and the great advantage likely to accrue to the patient, argue much in favor of the surgical treatment of these cases. The same facts also argue for the earlier employment of exploratory laminectomy in most spinal cases where the diagnosis is not perfectly clear, but where the symptoms point to some cord level as the seat of trouble.

A Report of the Treatment of Cerebrospinal Syphilis by Intra-spinous Injections of Salvarsanized Serum.

Rytina and Judd conclude as the result of their limited experience, as follows:

1. Intraspinous injection of salvarsanized serum, with proper precautions, is a safe treatment.

2. The results obtained indicate its superiority over the older known methods.

3. Treatment must be persisted in until the laboratory findings are negative irrespective of the clinical progress observed.

4. Such clinical and laboratory improvements as have been observed by us have still to go further. The permanency of the improvement still has to be determined.—(*The American Journal of The Medical Sciences.*—Vol. cxlix—No. 2.)

Effect of Intravenous and Intraspinal Treatments on Cerebro-Spinal Syphilis.—(*The Archives of Internal Medicine,* Vol. 15, No. 1).—Draper summarizes the results of his observations on these forms of treatment as follows:

Clinically very marked improvement occurs in all groups of cases. In the spinal types pain is usually relieved; ataxia helped in most instances, and not very markedly in a few. The bulbar types and those with fairly pronounced psychic disturbances, depending perhaps on meningeal irritation, show marked improvement in symptoms as well as in spinal fluid. The more definite psychic disturbances also may clear up completely, but their spinal fluids cannot in every case be brought to normal. The cell-count has almost always been reduced in them, but the Wassermann test rarely disappears below 0.3 c. c.

In some cases, especially those treated with serum salvarsanized in vitro, transient numbness in the feet has appeared; in other cases a slight failing in general robustness, which may be an arsenic effect; and in several instances rather severe pains following the intraspinal injection have been seen. In two cases (76 and 96) there has been a sudden increase in ataxia following a period of definite improvement.

Notwithstanding these undesirable features, the improvement in symptoms in almost all cases is of such striking nature that the method should be given a most careful and thorough study by numerous observers. It is, however, a procedure which must be carried out with the greatest attention to the detail of technic in all its steps, otherwise serious symptoms may be induced. At present there is sufficient evidence to show that it is unsafe to give more than two, or at most three, consecutive injections of serum to which salvarsan has been added directly. In no case should more than 0.005 gm. be added. On the other hand, apparently any

number of intraspinal injections may be given with impunity when serum salvarsanized in vivo is used.

In those cases which do well the rapid and satisfactory improvement may lead to a premature cessation of treatment. For the elaborateness of the procedure arouses an impulse on the part both of patient and physician to curtail the number of treatments. But with our present knowledge of the significance of syphilitic serological reactions, so long as the spinal fluid or blood gives a positive Wassermann test, the case may be looked on as one potentially capable of relapse. Consequently, no matter how well the patient feels and seems to be, treatment must be continued unremittingly until the laboratory tests are persistently negative.

Fibrolysin in Neuralgia.—In *"Practical Medicine,"* of Delhi, India, December, 1914, Dr. James Third has an interesting article on the treatment of sciatica and other neuralgias with fibrolysin.

Sciatica is one of the most obstinate, as well as painful, affections that the physician is called on to treat. It is usually a localized interstitial neuritis; that is, involving the connective tissue and blood vessels. Parenchymatous neuritis is, as a rule, of toxic origin, such as are found in diphtheria, alcoholism and lead intoxication. It was in the interstitial form that Dr. Third employed fibrolysin, though it is possible that it may do good in the other form. Some cases of sciatica are neuralgic in character, and it is at times difficult at first to differentiate between neuritis and neuralgia. If the tendo achillis jerk be absent, the condition may be regarded as a neuritis. In Dr. Third's acute cases, the ankle-jerk was present, but less active than the normal. The "reaction of degeneration," on which dependence is placed in other forms of neuritis, may be absent here, especially in the earlier stages of the affection. When muscular atrophy is marked, the diagnosis is clear.

Dr. Third puts his patients to bed for a week or more, and applies extension to the affected limb. The medicinal treatment consists of injections into the nerve of 2.3 c.c. of fibrolysin on alternate days. He has tried other solutions in sciatica, but he has had the best results from fibrolysin. He strongly cautions against the use of alcohol injections into the sciatic nerve, on account of the alarming paralysis that sometimes follows its use.

Mode of Injection: The position of the patient is immaterial.

In an acute case, the patient is in bed, of course. When the patient is walking about, the best way to proceed is as follows: the patient stands with one hand resting on the back of a chair, knee semi-flexed, toes against the hollow of the opposite foot, heel raised about three inches from the floor. Find a point midway between the tuber ischii and the great trochanter. Wet a brush with tincture of iodin, and draw a line upwards and downwards from this point along the course of the nerve for about two inches. Disinfect the central part with iodin.

The syringe should be large enough to hold the entire dose. The needle should be three inches in length, and not much larger than the ordinary hypodermic needle. Strict asepsis should be observed. With a needle of this size local anesthesia is hardly necessary. The needle should be passed in at the selected spot for about one and a half to two and a half inches. The moment the nerve is punctured the patient will complain of a tingling sensation down the limb. Should the nerve not be reached on the first attempt, the needle should be withdrawn a little, and moved gently from side to side. As soon as the patient experiences the tingling sensation, the contents of the syringe should be slowly discharged. There is usually severe pain, but it does not last more than a few minutes. The injections are made every other day.

Altogether, thirteen cases have been treated by the above method, with gratifying results.

In one case of infraorbital neuralgia in a robust woman of forty-five, the fibrolysin was injected into the infraorbital canal. Within an hour the cheek was black and so swollen that the eye was closed, due to puncture of the accompanying blood vessels. The swelling subsided in a few days, but the neuralgia was cured, for there had been no recurrence for five months. McSHANE.

RESECTIONS AND EXCLUSIONS—INTESTINES—OPERATIVE TREATMENT (Oppel. *Annals of Surgery*, Oct. 1914). "Resections of the stomach when combined with those of the colon end fatally." Cases of cancer which would require such operation as above are considered by Oppel as inoperable.

Treatment of megacolon (congenital) consists of coloplication, colofixation, artificial anus, entero-anastamosis, and resection of sigmoid.

Treatment of Ulcerative Colitis: Colostomy, ileosigmoidostomy and resection.

Treatment of Carcinoma: Resection, entero-anastomosis, artificial anus.

Oppel states that in order to cure a fecal fistula of the large intestine by means of an anastomosis, it is necessary to do a complete *bilateral* exclusion. He further states extensive unilateral exclusions are insufficient because the contents of the bowels return through the large intestine to the fistula. Cases are cited and illustrations shown. Ileosigmoidostomy does not therefore cure a fistula of the colon because of the reverse peristalsis. Even in the absence of fistula this antiperistaltic wave goes on and the excluded gut acts as a cul-de-sac, which gives trouble. "Whatever we do, whether a complete bilateral exclusion or a resection of the large intestine we should as far as possible avoid the formation of cul-de-sacs. Should we on purpose desire to perform *ileocolostomy, then such exclusion* should be combined with *a fistula* at the *top* of the *cul-de-sac.*

Enteroanastomosis not applicable as a method of treatment in fecal fistula and colitis (Oppel).

Sigmoidorectostomy cured 5 out of 7 cases.

Every *bilateral* exclusion of large intestines must be accompanied by the establishment of a fistula of the excluded portion of the gut.

Three types of artificial intestinal fistulæ:

(1) Mucous fistula.
(2) Fecal fistula.
(3) Artificial anus.

Mucous fistulæ are the direct result of exclusion. They are all of two types: (a) temporary; (b) permanent.

Temporary when the excluded gut can be resected; Permanent where no resection can be undertaken, as in neglected cancers, tuberculosis and actinomycosis.

Fecal fistulæ ought always to be temporary.

Two types of fecal fistulæ:

(1) Auxiliary, established at the end of the cul-de-sac in unilateral exclusion.

(2) Self-existent, made with the object of treating colitis, etc.

Appendecostomy should be limited to the treatment of severe ulcerative colitis cases. Oppel thinks well of appendecostomy.

Oppel advocates cecoplication in conjunction with appendectomy. Oppel expresses the belief that many cases of appendicitis are the expression of colitis and therefore great good might come from appendecostomies.

Appendecostomy does not put the large intestine into a state of inactivity, not even when combined with ileosigmoidostomy, thereore Oppel concludes when it is desirable to give rest to the gut an artificial anus is the only means at our command. Right or left sided artificial anus is done, depending on where the trouble is.

In colitis operative measures are indicated only when the patient resists all forms of medical measures.

Indications for Artificial Anus.

(1) Immobilization of large bowel.

(2) As a preliminary step to resection of rectum.

(3) When signs of obstruction begin to appear, especially in malignant disease.

Resection of Large Intestine.

(1) Congenital megacolon.

(2) Benign and malignant new growths.

(3) Volvulus.

(4) Colitis.

Resection of the colon does not in the least affect the patient. Patients with malignant condition bear resection poorly, those with non-malignant conditions stand the operations well.

Oppel: 10 non-malignant .....1 death.
6 malignant .....3 deaths.

Oppel advises 2 step operations in malignant disease.

One step operation mortality 29 per cent.

Two step operation mortality 16 per cent.

Quoted by Oppel (Finkelstein).

Oppel uses lateral anastomosis—when uniting ends of colon he cuts meso-colon-purse strings ends. No buttons are used.

ISIDORE COHN.

STATUS LYMPHATICUS. Dr. Thursfield (*Brit. Jour. Child Dis.*, Nov. 14). In a discussion of the causes of sudden death in children reviews the literature rather thoroughly and concludes that the condition of status lymphaticus is not merely a disorder of the

thymus, but a much more complicated disorder of the whole "ductless gland" system.

Paltauf's hypothesis concerning status lymphaticus,—a constitutional disorder manifested by a hypertrophy of all the lymphatic structures of the body, including the thymus gland, has had many critics as well as many supporters. First the question of what is to be considered the normal weight of the thymus is the subject of much controversy. Many authorities put the normal weight at 25 grm., others at 40 grm., while Dr. Thursfield considers that any thymus which exceeds 10 or 12 grams during the first two years of life, is abnormal. It may be added that this latter view is more in accord with American investigators.

That pressure from an enlarged thymus may be the real cause of the symptoms in "lymphatism" is vouched for by many good authorities, but cases of this so-called thymic dyspnea, according to Dr. Thursfield, are extremely rare.

While there is a great deal yet to be learned concrning status lymphaticus, th fact remains that many sudden deaths are closely associated with this mysterious condition. Dr. Thursfield, therefore, emphasizes the importance of making an early diagnosis if possible before subjecting the patients to operations, etc.

According to Dr. Thursfield lymphoid hyperplasia, an increased area of dulness over the manubrium sterni, X-ray, together with the physical signs on unexplained attacks of dyspnea, a persistent low vitality, and intolerance of exertion are important factors in making a diagnosis of the conditions.

Pituitrin, an extract which has the extraordinary effect in obviating the results of shock, is recommended under treatment.

D. P. West.

The Vaccin Treatment of Scarlet Fever. (Donald MacIntyre, *Brit. Jour. Child. Dis.*, Nov. 14). Comparing a hundred cases of scarlet fever admitted to Plaistow Hospital and treated with commercial stock vaccins with a hundred other scarlet fever cases admitted but not treated with vaccin, the results obtained by Dr. MacIntyre were practically nil. The object in giving the vaccin was to prevent complications; and, according to the report, "the difference between these two series is very small, and might be found between any similar series of hospital cases."

Five cases of septic scarlet fever were treated in the acute stage

with autogenous streptococcic vaccin, and again it could not be said that the vaccin treatment had any definite effect in any of the cases.

Again, autogenous vaccin was used in the treatment of nasal and aural discharges. Large doses were used, 100 million as the initial injection, repeated at five-day intervals. Out of 28 cases of nasal discharge treated, 23 were cured, while 5 showed no improvement. Out of 14 cases of aural discharge treated, 8 were cured, while 6 remained chronic.

Dr. MacIntyre concludes that the cure of nasal discharges can be obtained more quickly with vaccin treatment than with ordinary methods, while the same statement cannot be made in the case of aural discharges. D. P. W.

Medical News Items

Hutchinson Collection Given to Johns Hopkins.—The Jonathan Hutchinson collection of original drawings, colored plates and photographs, illustrating clinical work in medicine and surgery and constituting one of the rarest collections known to physicians, was recently secured by Sir William Osler and presented to Johns Hopkins Medical School by Wm. A. Marburg.

New York Polyclinic Receives Gift.—By the will of Mrs. Anna Palmer Draper the New York Polyclinic Medical School recently received an endowment of $50,000, and $10,000 as a gift from a member of the Board of Trustees of the institution.

Place de Curie.—A small park, formed by tearing down the old rue Dauphine in Paris, has been given the name of Curie, in honor of the discoverer of radium.

Maternity Hospitals for Cuba.—A law providing $400,000 for the erection of six maternity hospitals, one in each province of the island, has recently been signed by the president of Cuba. Of this sum, $100,000 is allotted for the hospital in the province of Habana, and $60,000 each for the hospitals in the other provinces. The money is to be appropriated from the sum accruing to the state from unclaimed lottery prizes.

French Exchanges Resumed.—The *Journal d'Urologie*, the *Archives des Maladies du Coeur*, and *Annales de Gynecologie et*

d'Obstetrique, have resumed publication. It is the intention of these publications to supply the missing numbers for 1914, which will be made up in the course of the current year to complete the volume to which the subscribers are entitled.

An Educational Lunch Room.—The Bureau of Public Health Education of the City of New York has opened an educational lunch room. Carefully arranged lunches are provided at a low cost with the object of furnishing food at cost price and of educating its patrons in food values and nutrition. A statement of the number of calories and grams of protein contained in each article appears on the menu.

Occupational School for Invalids.—In line with the healthful theory, which is becoming recognized among the members of the medical profession, that semi-invalids are usually given too much time for introspection, and that if useful, interesting occupation is provided their symptoms really become less acute, the Battle Creek Sanitarium has instituted an "Occupational School," in which many of the patients have already interested themselves to their health betterment. The branches taught in this school include weaving, basketry, stenciling, clay-modeling and others. The efficacy of the project has been clearly demonstrated, especially in quieting nervous patients.

Louisiana State Board.—A meeting of the Louisiana State Board of Medical Examiners was held in this city, June 3-4-5, 1915, for the purpose of conducting the examinations for state practice, with the following members present: Drs. J. G. Martin, President; S. L. White, Vice-President; Leon J. Menville: Homer Dupuy, and E. L. Leckert, Secretary.

Fifty-seven candidates, four of whom were colored, were present for examination in medicine. Forty-one made the required average and were granted certificates. There were ten failures and the certificates of six who made the required general average were withheld pending the adjustment of certain deficiencies in their examination. Of the ten failures seven had previously appeared for examination and failed to pass.

The names of those who received certificates follow:

William Holcombe Aiken, Walter Joseph Baker, James William Butts, Jack Thompson Cappel, Octave Charles Cassegrain, Frank Chetta, William Louis Culpepper, John Willis

Dupuis, Edward Beeg Faget, Ernest Cleveland Faulk, John William Faulk, Powell Beal Gardner, Marcellus C. Garner, Addley Hogan Gladden, Jr., George Henry Hauser, Harry Heiman, Roland Frank Hotard, David Hyman, Louis Alexander Hebert, Ralph Wilber Humphreys, Harold Leslie Kearney, Kyle Johnston Kinkead, Moise Lafleur, Thomas Latiolais, John Aden Lewis, Louis Vyasa James Lopez, Julius Watkins McCall, Alva Burton McKie, Abraham Mattes, Daniel Joseph Murphy, Kirby Arthur Roy, Henry Theodore Simon, Harry Vernon Sims, Elbert LaFayette Spence, John Lilly Trice, Irenaeus Nicholson Tucker, Charley Kendrick Wall, Charles Arthur Wyatt, Harry Loomis Zengel. Colored: Joshua Fitz-Osbert Anderson, Wade Evangelist Griffin.

At the same meeting two physicians were granted certificates by reciprocity, namely: Sanford Archibald Winsor, Rush Medical College, Illinois examination; William Johnston Yongue, University of Louisville, Kentucky examination.

At the midwifery examination, held June 4, twenty-one applicants were presented, ten of whom were colord. Six passed and received certificates; fifteen faild.

Those who received certificates follow:

Mrs. Ellen Barker (colored), Mrs. Lena P. Barnum, Mrs. Neomie A. Laudun, Mrs. Lena Lombardino, Millie Randall (colored), Mrs. Irene Scully.

The next meeting of the board, to be held for the purpose of examination, will take place in this city December 2-3-4, 1915.

Memorial for Madame Depage.—There is a movement on hand among English surgeons to establish a permanent memorial to Mme. Depage, of Brussels, who was lost on the Lusitania while on her way home with money collected in this country for the Red Cross.

Dedication of Georgia Hospitals.—On the first of June the Medical Department of the University of Georgia dedicated the new teaching hospitals provided for it by the city of Augusta. In the evening of the same day the commencement exercises took plac at the Grand Opera House.

Names Is Names.—Dr. J. B. Ache is a dentist at Uniontown, Pa.; Dr. M. D. Cure lives at Weston, W. Va.; Dr. Dye

lives at Sisterville, W. Va.; and Dr. A. Sickman lives at North Charleroi, Pa.

Tulane Medicos Get Rockefeller Positions.—Two graduates of the 1915 class of the Tulane School of Medicine have won positions with the International Health Commission of the Rockefeller Foundation for the study of the hookworm and other diseases. The graduates are Dr. Harold Leslie Kearney and Dr. P. B. Gardner.

Charity Hospital Graduates Nurses.—The Charity Hospital Training School graduated fifteen nurses at that institution on June 4. Dr. J. A. Danna, chairman of the faculty of lecturers at the training school delivered the annual address, and Charles I. Denechaud, member of the board of administrators, presented the diplomas. The graduates were: Misses Minnie Garlepied, Ollie Aycock, Mary Louise Reaves, Winona M. Chauvin, Corinne Graner, Hettie E. Brosset, Nancie Tate, Celine Donlon, Dolores J. Schaffer, Elizabeth Finnegan, I. Nettie Delaney, Beatrice Laiche, Elizabeth Donlon, Frances Ruth Fabing and Celine Rateau.

Health Inspectors' Requirements Raised.—It has been announced by Dr. S. S. Goldwater, Commissioner of Health of New York City, that in future all applicants for the position of medical inspector in the department, to which physicians only are eligible, must show at least one year of hospital experience as an intern in addition to the four-year medical course.

Golf Bet for Endowment.—The daily press gives as news the following: One of Philadelphia's wealthy residents has made a bet with a well-known surgeon of that city that he can beat him at a game of golf to be played in the autumn. If he is beaten he agrees to give $100,000 to endow a chair of surgical research in the University Medical School, the money to be paid into the treasury of the university before January 1, 1916. If he wins, the surgeon is to buy ten $100 shares of the stock of the golf club.

"Twilight Sleep" Unsatisfactory.—The "twilight sleep" treatment in maternity cases has been discontinued by the St. Louis City Hospital. The treatment has been employed since last February and the reason for its discontinuance is that the method has not proved to be entirely satisfactory.

Women Students During the War.—In the winter semester, 3,914 students were registered in German universities, which is an increase of 225 over the previous year. Of this increase, about 100 are in medical courses (944 as compared with 859) and 34 in dentistry (66 as compared with 32). About 25 per cent of the women are in Berlin University.

Health Rules in Many Languages.—A pamphlet printed in English, Bohemian, Italian and Yiddish has been issued by the health commissioner of Baltimore, of which ten thousand copies are to be distributed. This pamphlet teaches how to destroy flies and mosquitoes and tells tenants how to keep their premises in a clean and sanitary condition. It is said that the Poles of Baltimore have asked the commissioner to have the pamphlet translated into Polish.

Relief Fund for the Belgian Profession.—The report of the treasurer, Dr. F. F. Simpson, of the committee of American physicians for the aid of the Belgian profession, shows, for the week ending June 12, 1915, a total disbursement of $7,310.04.

Annual Commencement of Tulane University.—The annual commencement of the Tulane University of Louisiana took place at the French Opera House on June 2, 1915. The exercises were opened by a prayer from the Rev. David Sessums, D. D., and the alumni address was delivered by Arthur Alphonse Moreno of the Class of 1905. Dr. Robert Sharp, A. M., Ph. D., president of the University, made a report, which was followed by the conferring of the degrees. A unique event which marked the occasion of this year's exercises was the conferring of the degree of LL. D. upon two Southern women—Mrs. Ruth McEnery Stuart and Miss Grace King, of New Orleans—whose reputations as poet and author are well known. There were seventy-five graduates in medicine this year.

Tulane Medical Class of 1915.—The following is a list of the Tulane medical class of 1915, who have been papointed as interns in the New Orleans Charity Hospital, Touro Infirmary and Illinois Central R. R. Hospital: Drs. J. N. Tucker, H. L. Zengel, H. V. Sims, H. T. Simon, K. A. Roy, C. A. Quina, D. J. Murphy, J. W. McCall, D. Hyman, L. A. Hebert, G. H. Hauser, A. H. Gladden, Jr., G. K. Gerson, J. W. Dupuis, F. Chetta, J. T. Cappel, T. T. Batson, at Charity Hospital; C. K. Wall,

C. H. Townsend, J. W. Garrett, P. I. Donald, W. W. Burns, J. F. Baldwin, Touro Infirmary; V. K. Allen, Illinois Central R. R. Hospital.

Brevium.—Prof. Goehring of Karlsruhe has announced the newly discovered element of brevium, which is a radio-active disintegration product of uranium.

The Warren Triennial Prize.—A prize of $500 will be awarded on essays in English, French or German, representing original, unpublished work in physiology, surgery or pathologic anatomy. The essays must be typewritten and will be received up to April 14, 1916. For further information address Dr. Frederic A. Washburn, Resident Physician, Massachusetts General Hospital, Boston.

Vermilion Parish Medical Society Adopts Resolutions.—The following resolutions were adopted and unanimously passed by the Vermilion Parish Medical Society in session, May 20, 1915:

WHEREAS, The widespread use of harmful patent and proprietary, so-called, medicines is an evil;

WHEREAS, These nostrums are pernicious and baneful in effect;

WHEREAS, The enormous profits accruing from the sale of these nostrums are derived largely from the income of the poor and the unfortunate;

WHEREAS, The Vermilion Parish Medical Society is in full sympathy with the efforts of the United States Government and Post Office Department in their attempts to control the deception practiced in the manufacture, advertisement and sale of the so-called remedies, especially Wine of Cardui, Swamp Root, Syrup of Figs, Mothers' Friend, Vitalitas, and like preparations; and in hearty accord with the activities of the State Board of Health of Louisiana in its attacks on these preparations and with its regulations which require that all manufacturers print contents on labels or file with said board formulas used; therefore be it

Resolved, That we unanimously approve the campaign now in progress by the Louisiana State Board of Health and pledge to their efforts our earnest and active support in the hope that this evil may be controlled and ultimately eliminated.

Removals.—Dr. C. S. Wilson, from Winnsboro, La., to Oblong, Ill.

Journal of Pediatrics, to 25 East 60th Street, New York City.

Personals.—Dr. Henry P. Walcott, of Cambridge, Mass., was elected president of the American Academy of Arts and Sciences at the annual meeting of that organization recently held in Boston.

Dr. Richard Pearson Strong has been appointed regular professor of tropical medicine at Harvard University.

Dr. John G. Bowman has been appointed director of the American College of Surgeons, with executive offices at 30 North Michigan Avenue, Chicago.

Dr. H. T. Summersgill, superintendent of the University of California Hospital, has been appointed to succeed the late Dr. W. O. Mann, of Boston, as president of the American Hospital Association.

Dr. Edward C. Rosenow, of Chicago, has been appointed chief of bacteriological research, Mayo Foundation, Rochester, Minn. Dr. Rosenow will begin his new work on July 1.

Dr. Paul Gronnerud has been appointed surgeon to the West Side Hospital, Chicago, and professor of gynecology and head of the department of operative surgery in the Illinois Postgraduate Medical School. Dr. Gronnerud was formerly professor of operative surgery at the Chicago Polyclinic, but recently resigned.

Dr. Wm. deB. MacNider, Chapel Hill, N. C., of the University of North Carolina Medical Department, has sold the United States his residence lot for a postoffice site for $8,500.00.

Dr. Isadore Dyer and family will spend the summer at Pass Christian, Miss.

Dr. Chas. Chassaignac and family will spend the month of August at Gulfport, Miss.

MARRIED.—On June 25, 1915, Dr. Charles Leverich Eshleman to Miss Anais Legendre, both of this city.

On June 23, 1915, Dr. Edward Lacy King to Miss Edith Chalin Follett, both of this city.

DIED.—On June 1, 1915, Dr. Robert Clement French, at Touro Infirmary, a prominent physician of Natchez, Miss.

On June 1, 1915, Dr. J. D. Miller, a prominent physician of Batesville, Miss.

On June 23, 1915, Dr. Edmond W. Bourg, formerly of Assumption Parish and a resident of New Orleans for the past nine years, aged 66 years.

Book Reviews and Notices

All new publications sent to the JOURNAL will be appreciated and will invariably be promptly acknowledged under the heading of "Publications Received." While it will be the aim of the JOURNAL to review as many of the works accepted as possible, the editors will be guided by the space available and the merit of respective publications. The acceptance of a book implies no obligation to review.

A Text-Book of Diseases of the Nose and Throat, by D. Braden Kyle, A. M., M. D. With 272 illustrations, 27 of them in colors. Fifth edition, thoroughly revised and enlarged. W. B. Saunders Company, Philadelphia and London, 1914.

Dr. Kyle's book has long been recognized as one of the foremost standard works on diseases of the nose and throat. From the very beginning, Kyle had treated these affections in their relation to the general system, and has thus emphasized the point that a specialist should have a good, broad knowledge of general medicine.

The arrangement of his text is particularly to be commended, for it shows unity of design in pathology and etiology as well as in treatment. The entire work has been revised. The technic of tonsil surgery has been brought up to date. His chapter on vaccin-therapy in infections of the accessory sinuses is concise, but very valuable. Some cases of sinusitis refuse all operative intervention, and in such cases the specialist need not feel that he is in a hopeless plight. A successful application of this treatment calls for a fair knowledge of bacteriology and other matters on the part of the physician. While the field of application is not yet fully determined, we can find abundant grounds for hope in any chronic sinusitis that resists ordinary treatment, and in which there is a pure culture of the infecting micro-organism, and in chronic ethmoidal suppuration that does not heal after exacteration.

We are glad to welcome this new edition of a valuable work, and bespeak for it a continuance of the favor that it has always enjoyed.

McSHANE.

Urinary Analysis and Diagnosis, by Louis Heitzman, M. D. Third revised and enlarged edition. William Wood & Co., New York, 1915.

This edition is a considerable improvement over the former editions. The author has attempted to bring the work up to date. It does not include some of the more complicated tests, but includes all of those practical in any except the best equipped laboratories.

The several different tests for obtaining the same information are given, and the reader is left to choose for himself.

The clinical indications of various findings are discussed, and the book will be found especially valuable for the general practitioner, most of whom need suggestions as to what to test or examine for and what the significance of the urinary findings is.

BASS.

Infection, Immunity and Specific Therapy, by John A. Kolmer, M. D., Dr. P. H. W. B. Saunders Company, Philadelphia.

This is the best and most complete work of its kind that has come to the reviewer's attention. There are 813 pages of well-written text, in which the fundamental principles of infection, immunity, specific serum tests, specific reactions and specific therapy are plainly set forth. The technic for the many serum tests is stated in the very best way and is easily understood.

In the last part of the book the author has arranged a series of sixty exercises, consisting of 112 experiments in experimental infection and immunity. These are complete and well suited to the requirements of the advanced student.

I recommend this book most highly to all students of medicine and physicians who would inform themselves upon this important and, we may say, necessary part of medical knowledge. BASS.

Diabetes Mellitus. Designed for the Use of Practitioners of Medicine, by Nellis B. Foster, M. D. J. B. Lippincott Company, Philadelphia and London.

This book begins with a short, readable chapter on "Normal Metabolism." The "Sources of Glucose in the Animal Body" follows, and a goodly chapter it is. Next comes a chapter on "Experimental Glycosuria." After a brief review of the "puncture diabetes" of Claude Bernard, there is some considertion of the work of Eckhard, Pfluger, Rudinger, Neubauer, Von Mering, Minkouski, Pratt, Sandmeyer, Virchow, Bouchardat, Frerichs, Lancereaux, Lépine, Sauerbruck, Cohnheim, Forschbach, Hedon, Zubzer, Marcens, Underhill, Grey, von Noorden, Zuntz, Grube and Lusk.

The importance of acidosis is recognized in a chapter of twenty-two pages. "Pathogenesis" comes next; then "History," closely followed by "Etiology." The importance of "pathology" is emphasized in a fair chapter, reference being made to the best work in this direction. "Symptomatology" required a chapter of thirty-two pages. "Renal Diabetes" is given scant two and a half pages. "Diagnosis and Considerations which Affect the Course of the Disease" follows; then comes a chapter on "Total Metabolism in Diabetes," and next the chapter of "Treatment," which is the largest in the work, covering forty-five pages. The final chapter, on "Identification of Sugars," is thoroughly practical. The index follows.

Dr. Foster has given us a readable and practical book.

STORCK.

Biochemic Drug Assay Methods, with Special Reference to the Pharmacodynamic Standardization of Drugs, by Paul S. Pettenger, Ph. G., Phar. D. P. Blakiston's Sons & Co., Philadelphia.

As stated by the author in the preface, this "Manual of Bichemic Drug Assay Methods" is intended for students of pharmacy, pharmaceutic chemistry and medicine; also for the use of experts engaged in laboratories devoted to drug standardization work.

"That drugs should be instruments of precision" is generally conceded, and any means to this end should be encouraged.

This book will be interesting to the class of students for which it was primarily conceived. STORCK.

The Therapeutics of the Circulation, by Sir Lauder Brunton, Bt., M. D., D. Sc., LL. D. (Edin.), LL. D. (Aberd.), F. R. C. P., F. R. S.

Dr. Brunton deserves the thanks of the medical profession for this very acceptable revision of the first edition of his book. It consisted of eight lectures delivered in the spring of 1905. The purpose of such lectures, as expressed by the University of London in establishing them, was "to present the results of recent investigations by the investigators themselves."

In the arrangement of this, the second edition, Dr. Brunton has wisely altered the matter, dividing it for greater convenience into chapters. Much new matter is added.

For those practitioners who desire first-hand information on the physiology, pathology and pharmacology of cardio-vascular conditions, the book will serve this purpose excellently. While not occupying the foremost place in the book, therapeutics is sanely dealt with.

The practitioner desiring to inform himself further will find ample references to literature accompanying the respective chapters. The practitioner who has permitted himself to rust will find much to brighten him up in this small volume. STORCK.

Diseases of Bones and Joints, by Leonard W. Ely, M. D. Surgery Publishing Company, New York.

Dr. Ely is associate professor of surgery in Leland Stanford, Jr., University, of San Francisco, and as such has devoted a great deal of his time to the special subjects presented in his cleverly written book.

We heartily recommend this valuable little work for the concise way in which he expresses his ideas and opinions, and also for the numerous illustrations which faithfully corroborate the descriptive matter. Practical osteology is first taken up, followed, as it should be, by the physiology and pathology of bones and joints.

Tuberculosis naturally claims a large space. The chapter on syphilis is certainly worth reading and remembering. The various

acute and chronic articular and osseous infections and lesions are all briey but tersely commented on. LARUE.

Guiding Principles in Surgical Practice, by Frederick Emil Neef, M. L., M. D. Surgery Publishing Company, New York.

Dr. Neef has embodied in this volume of 160 pages merely his personal views in the guidance in surgical practice. He has quite thoroughly covered the ground, basing his conclusions on clinical observations in the operating room and at the bedside.

The careful study of the patient, the most essential preliminary to the formation of surgical judgment; the operative preliminaries and technic, the all-important post-operative care, are all given due consideration. A line here and there on the physiological repair of tissues proves profitable reading.

The book is neatly bound, and has for ready reference an attractive marginal index. LARUE.

Obstetric Nursing, by Charles Sumner Bacon, Ph. B., M. D. Lea & Febiger, Philadelphia and New York, 1915.

Of the many volumes on obstetric nursing that have recently appeared, this one must be ranked among the best. It is well arranged, amply illustrated, and written in a pleasing style. As a text-book for training schools for nurses, or for the practical nurse, it can be highly recommended. MILLER.

Public Health Laboratory Work, by Henry K. Kenwood. Sixth edition. Hueber, New York, 1914.

Whoever is familiar with the previous editions of this book will welcome the present new one. The methods and procedures laid down under the six main and various subheadings include all those likely to be of value to persons engaged in public health work. The author, whose wide experience enables him to eliminate the unessential and include the more necessary material, has dealth with his subjects with brevity and conciseness. The sketches of water detritus in the front part of the volume are not of much value, are crude, and, to say the least, are out of place in that position. One would think they belong where the subjects which they are intended to enlighten is found. The author evidently considered that light and heat were matters for architect or engineer, though these subjects are of general interest to the public health inspector. It is a book of great value in the laboratory where work of the nature for which it is intended is carried on. L. C. SCOTT.

Psychanalysis. Its Theories and Practical Application, by A. A. Brill, Ph. B., M. D. Second edition, thoroughly revised. W. B. Saunders Company, Philadelphia and London, 1914.

Since the publication of the first edition of this work, which we reviewed a little over a year ago, there appeared at various times

severe criticisms on the one hand and eulogies on the other on the Freudian theories and methods of psychanalysis from psychiatrists and neurologists, both of this country and abroad. Such comments have helped to bring this work still more before the profession. Today we have before us a second edition of the work, which has been thoroughly revised and enlarged by the addition of a chapter on "The Unconscious Factors in the Neuroses," another on "Fairy Tales as a Determinent of Dreams and Neurotic Symptoms," and a "Glossary" giving a definition of the neurological terms used through the book.

In commenting again we may say that, though we do not individually accept all that the Freudian views imply, yet this method of psychanalysis and its practical application are with us to stay, and will no doubt continue to prove of benefit, but only in the hands of those thoroughly trained in the study and qualified to practice this most intricate subject. CAZENAVETTE.

Diseases of the Skin, by James H Sequira, M D. (Lond.), F. R. C. S. (Eng). Second edition. P. Blakiston's Sons & Co. 1915.

The second edition of this excellent work on skin diseases shows many evidences of careful revision. There are new plates and new chapters. More field is covered than in the first edition and the chapters on syphilis and pellagra are especially noteworthy as being thorough and up to date. The illustrations are judiciously selected and some of the colored plates are marvelously exemplifying. The author departs from the usual classification of skin diseases, grouping these according to the predominant etiological factor. The student of dermatology will find this method of large assistance as diseases of different character are brought in closer contrast and the diagnosis is more readily understood.

The references are numerous but by no means exhaustive—aimed evidently at aiding the student to a wider reading rather than a precise commentary.

The treatment is everywhere clearly presented and sufficiently so to aid in the care and cure of those diseases which are amenable to relief. The work is altogether a most worthy effort of a painstaking author and it is presented in the best of form by a careful publisher. DYER.

A History of Laryngology and Rhinology. By Jonathan Wright, M. D., Second edition. Philadelphia and New York: Lea & Febiger, 1914.

It is always interesting and profitable to delve into the past and see how the present came to be what it is. The history of medicine is one of the most fascinating of all studies. In his present work, Dr. Jonathan Wright fully sustains the interest in a special branch of the medical art that attaches to all parts of medical history. He goes into all phases of the growth of our knowledge of laryngology

and rhinology, and shows how the seeds planted by our predecessors are now bearing fruit continuously and increasingly. The present is ever the superstructure built upon the foundations of the past. We are under perpetual obligations to the foundation-builders, for if they had not done that labor for us we would be under the painful necessity of doing that same work ourselves, and leaving behind us monuments of industry and learning that would excite the amusement and pity of our successors just as we smile at and pity some of the work of our predecessors. However it may not be amiss to mention that Dr. Wright says a crude but effective method of laryngeal intubation was practised during the time of Hippocrates, which antedates Dr. Jos. O'Dwyer's time by about twenty-three centuries. Many other interesting facts are brought out by Dr. Wright. A perusal of his work not merely entertains us, but causes us also to conceive a profound respect for the men who gave of their best in the cause of humanity, and oftimes wrote and toiled in the fear of persecution as well as in the face of adverse circumstances.

McSHANE.

The Difficulties and Emergencies of Obstetric Practice, by Comins Berkeley, M. A., M. D., M. R. C. S., F. R. C. P., and Victor Bonney, M. S., M. D., F. R. C. S., M. R. C. P. Second edition. P. Blakiston's Sons Co., Philadelphia.

Every possible complication of pregnancy appears to have been discussed in this excellent book. It was arranged with the idea of affording guidance in plain terms to the practitioner when he is called upon to deal with difficulties and emergencies that attend in obstetric practice. The authors are surgeons who enjoy large hospital and teaching positions over London, and they have endeavored to give as far as possible their own personal views and results in this book.

A book intending to cover such a large subject must necessarily be brief in many particulars. This is the only feature which might be improved in future editions. The arrangement of the book is excellent and for this reason a valuable reference volume.

The second edition has been thoroughly revised and many illustrations added. MILLER.

Tropical Diseases. A Manual of the Diseases of Warm Climates, by Sir Patrick Manson, G. C. M. G., M. D., LL. D. (Aberdeen), etc. Fifth edition. Revised. Wm. Wood & Co., New York.

"Manson on Tropical Diseases" is the refuge of most students interested in this subject and the handy volume in review again emphasizes the value of the work of this pioneer in the field.

The advances in tropical medicine, produced by a growing number of the workers in the field, has necessitated a complete revision after eight years and throughout the book this careful task is in evidence. A brief but comprehensive description of Bass' cultivation

of the malaria parasite is given, which forms a part of a most excellent article on Malaria, altogether covering over a hundred and fifty pages of the book. This is a basis on which to consider the scope of other subjects discussed, in their relative importance, occupying proportionate space. There are many excellent illustrations, especially those dealing with bacteriological and helminthological detail. On the other hand, the book is marred by a few reproductions of archaic plates, done over in poor wood cuts, and in nowise indicating anything which can resemble the disease discussed. This is particularly true of the illustrations employed in the articles on leprosy and yaws. This in nowise detracts from the text, which is in every way complete in covering the subjects embraced in the field of tropical diseases. DYER.

The Backward Baby, by Herman B. Sheffield, M .D. Alvarenga Prize Essay for 1914. Rebman Co., New York.

This is an analytical presentation of the subject of amentia, beginning with theories of the originating and contributing factors producing it, going on to the examination methods to be followed in determining types and stages and continuing with a discussion of varieties of types. Treatment finds extended notice and an excellent bibliography concludes the book.

The essay is full of interest and offers to the student of the delinquent a mass of material for thought. DYER.

Publications Received

LEA & FEBIGER. Philadelphia and New York, 1915.

Diseases of the Digestive Organs, by Chas. D. Aaron, Sc., M. D.

Progressive Medicine, edited by Hobart Amory Hare, M. D., assisted by Leighton F. Appleman, M. D. June 1, 1915.

Outlines of Internal Medicine for the Use of Nurses, by Clifford Bailey Farr, A. M., M. D.

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Carcinoma of the Breast, by John B. Deaver, M. D.

Some Diagnostic Errors in Differentiating Lesions of the Cervix, by E. A. Weiss, M. D.

Scientific Medicine vs. Quackery; Tragedies in Sexologist's Practice; Chronic Prostatitis and Its Treatment by the General Practitioner; Chancroids and Their Treatment by the General Practitioner, by William J. Robinson, M. D.

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MORTUARY REPORT OF SHREVEPORT.

Computed from the Monthly Report of the Board of Health of the City of Shreveportfor May, 1915.

CAUSE.	Resident				Non-Resident				
	Whi.		Col.		Whi.		Col.		
	M	F	M	F	M	F	M	F	Total
Typhoid Fever	1	..	..	1	..	..	1	..	....
Intermittent Fever (Malarial Cachexia)	..	..	..	..	..	..	..	..	....
Smallpox	..	..	..	..	..	..	..	..	....
Measles	..	..	..	..	..	..	..	..	....
Scarlet Fever	..	..	..	..	..	..	..	..	....
Whooping Cough	..	..	..	..	..	1	..	..	....
Diphtheria and Croup	..	..	..	..	..	..	..	..	....
Influenza	..	..	..	..	..	..	..	..	....
Cholera Nostras	..	..	..	..	..	..	..	..	....
Pyemia and Septicaemia	..	..	..	..	..	..	..	..	....
Tuberculosis	..	..	4	2	1	1	1	1	....
Cancer	..	..	..	..	..	..	..	..	....
Rheumatism and Gout	..	..	..	..	..	..	..	..	....
Diabetes	..	..	..	..	1	..	..	..	....
Alcoholism	..	..	..	..	..	..	..	..	....
Encephalitis and Meningitis	..	..	..	..	..	..	..	..	....
Locomotor Ataxia	..	..	..	..	..	..	..	..	....
Congestion, Hemorrhage and Softening of Brain	1	..	..	1	..	..	..	..	....
Paralysis	..	..	..	..	..	..	1	..	....
Convulsions of Infancy	..	..	..	..	..	..	..	..	....
Other Diseases of Infancy	..	..	..	..	..	..	..	..	....
Tetanus	..	..	..	..	..	..	..	..	....
Other Nervous Diseases	..	..	..	..	..	..	..	..	....
Heart Diseases	..	..	..	..	..	..	..	..	....
Bronchitis	..	..	..	..	1	1	2	1	....
Pneumonia and Broncho-Pneumonia	1	..	1	2	..	..	..	..	....
Other Respiratory Diseases	..	..	..	..	..	..	..	..	....
Ulcer of Stomach	1	..	1	..	..	..	..	..	....
Other Diseases of the Stomach	..	..	..	..	..	..	..	..	....
Dysentery	..	..	..	..	..	..	1	..	....
Diarrhea and Enteritis, under 2 years	..	..	1	..	..	..	1	..	....
Diarrhea and Enteritis, over 2 years	..	..	..	..	..	..	..	..	....
Hernia, Intestinal Obstruction	..	1	..	1	1	..	..	..	....
Cirrhosis of Liver	..	..	1	1	..	..	..	..	....
Other Diseases of the Liver	..	..	1	1	..	..	..	..	....
Simple Peritonitis	..	..	..	..	..	..	..	..	....
Appendicitis	..	..	..	..	..	..	..	..	....
Bright's Disease	..	..	..	..	..	..	..	..	....
Other Genito-urinary Diseases	..	..	..	..	..	..	1	..	....
Puerperal Diseases	..	..	..	..	..	..	..	..	....
Senile Debility	..	..	..	..	..	..	..	..	....
Suicide	..	..	..	..	..	..	..	..	....
Injuries	1	1	1	..	2	..	..	1	....
All Other Causes	3	3	7	8	3	4	10	12	....
Total	8	5	17	17	9	7	18	15	96

Still-born Children—White 2, Colored 5; total 7.

Population of City (estimated)—White 24,000, Colored 16,000; total 40,000.

Death Rate per 1000 per annum for Month—White 5.42; colored 21.24; total 11.75.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans for May, 1915.

Cause.		Colored	Total
Typhoid Fever	1	4	5
Intermittent Fever (Malarial Cachexia)	1	3	4
Smallpox	.....	.....	....
Measles	1	.....	1
Scarlet Fever	.....	.....	....
Whooping Cough	4	3	7
Diphtheria and Croup	4	2	6
Influena	4	3	7
Cholera Nostras	1	.....	1
Pyemia and Septicemia	.....	1	1
Tuberculosis	43	58	101
Cancer	22	11	33
Rheumatism and Gout	.....	.....	....
Diabetes	3	.....	3
Alcoholism	.....	.....	....
Encephalitis and Meningitis	5	.....	5
Locomotor Ataxia	.....	.....	....
Congestion, Hemorrhage and Softening of Brain	22	8	30
Paralysis	3	2	5
Convulsions of Infancy	2	.....	2
Other Diseases of Infancy	9	3	12
Tetanus	1	1	2
Other Nervous Diseases	3	1	4
Heart Diseases	58	42	100
Bronchitis	2	3	5
Pneumonia and Broncho-Pneumonia	21	22	43
Other Respiratory Diseases	2	.....	2
Ulcer of Stomach	1	1	2
Other Diseases of the Stomach	1	1	2
Diarrhea, Dysentery and Enteritis	38	47	85
Hernia, Intestinal Obstruction	3	1	4
Cirrhosis of Liver	5	3	8
Other Diseases of the Liver	2	.....	2
Simple Peritonitis	1	.....	1
Appendicitis	7	1	8
Bright's Disease	33	22	55
Other Genito-Urinary Diseases	10	11	21
Puerperal Diseases	8	.....	8
Senile Debility	2	.....	2
Suicide	9	.....	9
Injuries	20	16	36
All Other Causes	11	33	44
Total	363	303	666

Still-born Children—White, 18; colored, 29. Total, 47.

Population of City (estimated)—White, 272,000; colored, 101,000. Total, 373,000.

Death Rate per 1000 per Annum for Month—White, 16.01; colored, 35.99. Total, 21.43. Non-residents excluded, 18.79.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure 29.90

Mean temperature ..... 77.

Total precipitation ..... 3.64 inches

Prevailing direction of wind, southwest.

New Orleans Medical and Surgical Journal.

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Original Articles

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. A complimentary edition of one hundred reprints of his article will be furnished each contributor should he so desire. Covers for same, or any number of reprints, may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

HISTORY OF CATARACT EXTRACTIONS.

By T. J. DIMITRY, M. D.,

Professor of Ophthalmology, New Orleans Post-Graduate Medical School.
New Orleans, La.

It has been very interesting to me to become informed of the history of cataract extraction. In this study the claims to originality by many recent day surgeons are readily disproven. The numerous modifications by these gentlemen are deserving of little consideration, for others had suggested or practically carried out the same technic years ago.

It is not my desire to enter into the historical discussion previous to the time of Daviel, yet a word will not be amiss, for one can realize that the start was made at a very early period. The depression of the cataract by means of the needle is one of the oldest operations of ocular surgery. It is doubtful if at the period of Hippocrates, fourteen hundred years before the Christian era, anything was known of cataract, for there appears but one vague passage in his writings, possibly alluding to this condition, thus: Sometimes the pupil gets distorted, and takes on quickly the color of the sea, instead of black. When this happens, there is no remedy.

In the writings of Celsus, in the first century, there is a lengthy description of the depression operation, and he had obtained his data from the Roman writers who had compiled remnants of writings spared from the two great fires which destroyed the library of Alexander in the year forty-six before our era.

Egypt is possibly the birthplace of the first cataract operation, and the glory is to the Greek School of Hippocrates. Galen, one hundred and fifty years before the first century, and Pliny, writing in the first century, leave us without a doubt that surgeons tried to remove the cataract by discission or depression. In their description, there is no mention of the removal of the hardened or ripened cataract. Paul Engine, in the seventh century, offers an excellent description to which, until this day, little can be added. Albancasis, who lived in Cordue, reproduces the work of Paul Engine. Rhazes speaks of the suction operation for the soft cataract, and this is confirmed by Hirschberg, for he has found in the designs of the manuscripts of that time, hollow needles that served the Arab oculists to suck out the soft masses of the cataract. From this time there is a lapse till 1363, for again is mentioned the technic of Galen and Paul Engine, by Guy de Chauliac. Ambroise Paré and one of his students, Guillemeau, writing in the sixteenth century, show the incision operation again used by the Arabs, for they had abandoned the suction operation, considering it impracticable.

A review of the above facts shows that no progress was made since the time of Galen, one hundred and fifty years before the Christian era. At the end of the seventeenth century we hear of Daviel, who made definite rules and extracted the hard cataract —this, in the year 1750. Daviel's technic did not occur suddenly, but resulted from certain earlier discoveries. Keppler, writing in 1914, made known the role of the crystalline lens. The dissections of Brusseau, who read a paper before the Academy of Sciences of France, proclaimed the cataract an opaque crystalline lens. The extraction of Daviel, of 1750, had been accidentally preceded by St. Yves in 1707, and Poufour du Petit in 1708. The latter removed a lens that had been dislocated into the anterior chamber. Mary, before Daviel, proposed clearly to take out in a systematic way the cataract; and it is this idea that Daviel took up afterwards and put in practice successfully.

We have Ferrier on the cystitome. The extraction of the cataract might never have been possible had discission of the membrane not been known of before. In the year 1745 Daviel, oculist to the king, performed for the first time a premeditated extraction of a hard cataract on the Hermit of Provence. This operation partly succeeded, and thenceforth became the subject of his studies. Five years later we hear of him on a trip to Mannheim to treat the Princess Palatine. During this trip he extracted systematically the opaque lens. He performed the operation a number of times, and the descriptions of his technic are to be found in a letter addressed to Raymon de Vermille, physician to the Princess of Chicoyneau, who was also physician in particular to the king. The letter was dated November 25, 1750, and in 1751 there appeared in Paris a treatise of the first announcement of his procedure. One of his scholars, Thurand, in the early part of the same year, published another treatise, minutely describing his friend's technic. We are convinced from this source that Daviel cut but one-half of the cornea, and never two-thirds. It is possible he made such an incision in the original operation, but only as a trial. I attach the description of Thurand. The patient is sitting, and the surgeon is sitting in front of him. The surgeon, with the finger of the left hand, lowers the inferior lid and leaves the index finger on the conjunctiva, to moderate as much as possible the movement of the eye. The upper lid and head are taken care of by an assistant. The eye thus fixed, he takes a needle, with two fingers and thumb of the right hand, as he would take a pen to write; then, the elbow leaning strongly, he guides the needle near the cornea to the same height as the limbus, pushes it slowly, but not strongly, into the anterior chamber, so as not to wound the iris. In taking out the needle he cuts slowly to one side and then to the other. He desires to make a large opening; the humor escapes, and the assistant wipes it. The eye, once wiped, he takes the scissors, that are curved concave-convex, and used in making it of the exact size desired. These scissors adapt themselves to the spherical curvature of the eye. Half of the cornea is cut, the flap is lifted up with the spatula, and he then introduces a needle into the eye until the capsule of the crystalline lens is opened into the back part of the pupil. Most times the lens comes out of itself. If it does not, pressure is made with the finger, but in a manner to maintain the vitreous and to push out

the lens. As soon as the lens is passed into the anterior chamber, it is easily expulsed on the outside by means of the spatula.

In all the great discoveries we find opposition, and so it is with the cataract extraction. Palluci made claim to the discovery of the extraction in 1751, and laid his claims before the Academy of Medicine. He criticized the three instruments used by Daviel and the manner of the operation. Palluci used but one instrument, and he was the first to use the contra puncture. Daviel hesitated with this contra puncture, but later he adopted it when his friend and scholar, Lafaye, had constructed for that operation a little knife, which was long and very narrow, and could pass for the antecedent of the Græfe knife so extensively used to-day. Lafaye invented an instrument he called the cystitome, or rather gave that name to an instrument that would open up the capsule of the lens. The cystitome of to-day is of an entirely different shape, and was constructed by Rivaud in the beginning of the nineteenth century. The different cuts, as made by the surgeons at different times, are filled with interest, but space does not permit of these diagrams. They are beautifully reproduced in the Encyclopedia of Ophthalmology. Daviel used a knife that was afterwards modified by Yæger. The Græfe knife is the one of Tenon, and of Lafaye slightly transformed. In 1755 Béranger had constructed a knife which is nothing more than the one known under the name of Beer's. It was Béranger who abandoned the digital fixation of the eye for the hook fixation. Lorrente, at the end of the eighteenth century, used to wash the anterior chamber after the operation, and in 1779 Sonnezet evacuated the lens with an Anel's syringe. The extraction spread throughout Europe, and was accepted with great favor. In the nineteenth century the operation met with a great setback in France, due to the high authority of Scarpa and Dupuytren. They seemed to believe in the decompression operation, and declared the operation to be satisfactory in appearance and immediate results. Dupuytren was the first operator to advise placing the patient in the reclining position, and who first practiced it. In Germany and England the influence of Scarpa and Dupuytren had little effect, and they remained faithful to the extraction of Daviel.

In 1830 we have the new school of ophthalmology. We have

Desmare and Sichel confirming the idea of Beer, who systematized and affirmed the technic of the extraction. We find the flap extraction meeting with reversal in favor of linear extraction. This operation, except the extraction of the unripe lens, is not practiced by any one to-day, and its technic, with iridectomy, existed for only twenty years or thereabouts. The extraction of Daviel counted then only a few followers. We hear of Gibson, 1811, and Traver, 1814, in the linear extraction. Desmare, 1815, tried to extract the hard lens by the linear method, but, in seeking to break up the lens against the posterior surface of the cornea, considered it brutal and liable to serious accident. Græfe continued the iridectomy with the linear extraction.

For quite a time we hear of the surgeons making their incision in the cornea. Following this, we then had the scoop extraction of Græfe. He operated with a straight knife, which is to-day the most used of the cataract knives. And we again have the incision through the periphery of the anterior chamber; the point penetrating in the opaque portion of the limbus comes out on the other side at a similar point. This incision contended with a greater possibility of a loss of vitreous and of cutting the iris. Mooren advised the use of the fifteen days' preliminary iridectomy to the extraction of the lens. DeWecker, in his communication in 1875 before the Academy of Science, shows clearly the return to the method of Daviel.

The modern literature is filled with the extraction of the lens in its capsule.

SOME EXPERIENCES WITH DR. KARL VON RUCK'S WATERY EXTRACT OF TUBERCLE BACILLI AND VACCIN FOR TUBERCULOSIS

In Pulmonary Tuberculosis, Infantile Marasmus, Tuberculous Rheumatism and in "Hemorrhagic Conditions."

By B. F. TERRY, M. D., Houston, Texas.

My acquaintance with Dr. Karl von Ruck's tuberculosis remedies commenced in 1901, and since then I have treated a large number of tuberculous cases, at first with the watery extract of tubercle bacilli and, since the spring of 1912, with his vaccin. My experience with the watery extract extends over forty-seven early and thirty-five moderately advanced cases of pulmonary tubercu-

losis, all of which were apparently cured, and one far advanced case, in which death occurred. With the vaccin I have, up to November, 1914, treated 451 early and twenty-seven moderately advanced cases, with apparently curative results in all except six cases of the latter class, the patients being still under treatment at this time.

Aside from the cases of pulmonary tuberculosis, I have employed both preparations with excellent results in numerous cases of glandular and of surgical tuberculosis, as well as in one case of laryngeal tuberculosis. I shall give a few cases illustrating my experiences in treating pulmonary tuberculosis in adults and occult tuberculosis in infants, with both preparations, all of which cases go to show the favorable influence of specific treatment in tuberculosis, provided a suitable remedy is employed.

CASE RESULTS WITH WATERY EXTRACT.

Case 1. Treated in September, October and November, 1911. Pulmonary tuberculosis. Female, age 35. Had been in declining health for six years and a sufferer from asthma since her fourteenth year of age. At the beginning of treatment the temperature ranged from 99.5° to 101° F.; pulse, 96; weight, 109. There was moderate cough and expectoration; both lungs were involved; the patient was profoundly anemic.

This patient was treated with watery extract for three months, with immediate improvement. At the close of treatment the temperature was normal; pulse, 76; cough and expectoration had ceased. The patient gained nine pounds during her treatment, and her asthma left her after the first dose.

This patient has borne three children since treatment, has had no return of her asthma, and now weighs 138 pounds. She has enjoyed good health since that time; has not a gray hair on her head, does not look to be over 35 years of age, and is remarkably vigorous and well preserved for a woman of 48 years.

Case 2. Treated in October, November and December, 1901. Tuberculous marasmus in a male infant seven months old, born of a tuberculous mother. Weight at birth, 12 pounds. Began to decline from birth, and emaciation became extreme. Weight, only 6½ pounds. Digestive disturbances a prominent feature; copious mucous discharges; skin dry; mucous membranes pale; general anemia and a gradual wasting had been present for some time. The temperature ranged from 100° to 102° F.; the pulse was 140; the respiration 45. Every effort with medicines having failed, I decided to abandon drugs and to try the watery extract, although I had no guide for the treatment of so young an infant. The baby showed improvement from the first dose, and there was a rapid amelioration

in all of his symptoms. At the end of three months he was practically well. Skin soft; bowels normal; temperature, 98.3° F.; pulse, 100; appetite good; digestion good, cheeks rosy. The weight was 21 pounds—a gain of 14½ pounds, or of over 200 per cent. in the course of three months.

These two cases are given as illustrating my earliest experience in the use of the watery extract. The results were brilliant, and are given only as examples of the efficiency of the watery extract thirteen years ago. Like results have been accomplished all along since, and, when rightly used, the watery extract will accomplish great and lasting good. Case 1, as well as a number of other cases treated in 1901, were tried with the vaccin in 1913 and 1914, and they failed to react to it, showing that the results had been permanent. All cases treated with the watery extract have improved from year to year, and the further they go the better they are. They have been sick less than other people; have gradually gained in weight; have increased in vigor; suffered little or none from "la grippe," and are to-day living examples of the efficacy of the watery extract of tubercle bacilli. The second case is given in order to prove the efficiency of the remedy in early or infantile cases, and is probably the first case of immunization of an infant. "Necessity is the mother of invention." Driven to the last ditch in the treatment of this baby, and with death staring me in the face as the only probable outcome, I resorted to the watery extract, with such results as to astonish me and which were calculated to open a new and a wider vision of the possibilities and probabilities of this remedy.

CASES TREATED WITH VACCIN.

Case 195. Girl, six months old. Bottle-fed, as mother died a few days after her birth. Weight, 14 pounds; appetite poor; digestion very poor; profoundly anemic; actions from bowels mostly mucous; skin dry and harsh; appearance waxy. The baby cried and fretted almost constantly.

I gave this baby four doses of the old vaccin in amounts of 1/25, 1/16, 1/12, and 1/10 cubic centimeters, at intervals of five days; this was in August and September, 1913. The little patient showed improvement within twelve hours after the first dose was given. No medicines were administered after the vaccin treatment was begun. Soon sleep became sound and normal; appetite and digestion improved; the skin softened, becoming clear and of healthy appearance. The baby gained six pounds in three months. Within five months she had become one of the finest and healthiest babies in

town. Now, at the end of fifteen months, she still remains well and vigorous and enjoys perfect health. She has had no sickness since being treated.

Case 21. Man, age 41 years. Weight, 125 pounds; height, 5 feet 10 inches. Respiration, 32; pulse, 96; temperature, 99° to 100° F. Occupation, farmer. This patient had been in a "decline" for ten or twelve years, and for the last two years he had been unable to do any work. He was nervous; liver and bowels sluggish; appetite and digestion poor; heart weak, and irritable; sleep poor; kidney action excessive. The patient complained of extreme weakness.

I gave this man ten doses in all, at intervals of from five to seven days. Some of his reactions were rather violent, but I found that he was much improved after the reactions were over. He showed great and rapid improvement from the first; became free from fever within two weeks, and has had none since. The improvement was so rapid that at the end of two weeks he began to do light work. He gained ten pounds in the first two months, and at the end of that time he began to do regular farm work. Sleep had become refreshing; appetite and digestion good; the strength rapidly increased. Pulse was 76, of good volume; all nervousness had disappeared. He was apparently cured.

At the end of fifteen months' treatment this man weighs 150 pounds; he has made a crop and gathered it during the last fall; he is sturdy and vigorous, and has not been sick since I treated him. He is working every day—during the time of writing, at thrashing, walking two hours night and morning to his work. He is in better health now than for fifteen years before.

These are only two cases out of over five hundred treated with vaccin in the last seventeen months, and they are given as illustrating the wonderful curative effects of the vaccin in widely different conditions and at widely differing age periods. I have observed like results in infants, children, adolescents, adults, and in old people, ranging in age from two weeks to eighty-four years.

While my experience in the treatment of pulmonary and other forms of manifest tuberculosis with these two preparations has been extensive and crowned with very happy and gratifying results, none of them have been as remarkable to me as are those which I obtained in conditions apparently entirely foreign to tuberculosis, in which the question of the existence of this affection did not at first even occur to me. Administering the watery extract, years ago, in a variety of cases in which the ordinary drug

treatment had persistently failed me, more for the sake of doing something for my patients than with any definite therapeutic purpose, I was astonished and, I must admit, at first perplexed at the striking and decided improvement manifested by many of my patients. This experience repeated itself so often that ultimately it became the rule with me to resort to the watery extract whenever I was at the end of my resources, and I was usually successful in accomplishing a favorable result. The introduction of the vaccin in 1912 changed matters only in so far as I now obtained like results much more rapidly and promptly.

Being in the midst of a busy general practice, an old-time country physician with no laboratory facilities, and with but little time for study, I was naturally puzzled at these observations, especially as I did not then know of the extreme frequency of latent and inactive tuberculosis and of the many and varied troubles and symptoms which may arise in some way or another through the action of the tubercle bacillus. Two conditions confronted me with particular persistence, in which disgust with the uselessness of the customary methods of treatment and desperation in the urgent necessity of doing something for my patients forced me to the employment of the watery extract. These conditions are "rheumatism" in all its clinical manifestations, and the hemorrhagic condition, which is always terrifying, and becomes peculiarly trying and distressing after confinement. When I commenced to treat rheumatism with the watery extract I knew nothing of the work of the French authors, especially of Professor Poncet, of Lyons, who established the clinical entity of the so-called tuberculous rheumatism. By purely clinical observation, and mainly in confirmation of the old saying that "cures demonstrate the nature of diseases" (which, put into practice, may be called the therapeutic experiment), I arrived at the conclusion that chronic rheumatism always depends upon an underlying tuberculosis, which may be latent or active, and that the rheumatic manifestations can be lastingly removed by the efficient treatment of the tuberculosis.

The reason for my success with the watery extract in hemorrhagic conditions was less evident; but here, also, I was forced to assume an occult or latent tuberculosis, which in some way caused a depreciation of the circulatory system and which was remedied,

with satisfactory secondary effects, by specific antituberculosis treatment. My conclusions in this respect were likewise forced on me by practical observations, since early in my experience the watery extract, during the fall and winter of 1901 and 1902, I treated some tuberculous women who were pregnant at the time. These women had always had fearful postpartum hemorrhages in their previous confinements, but in those following their treatment with the watery extract of tubercle bacilli no abnormal loss of blood was experienced, and they all made safe recoveries. On thinking over these results it occurred to me that the watery extract must bring about some change in the blood of "bleeders" by which the tendency to bleeding was corrected, and this idea suggested the presence of an underlying latent tuberculosis as responsible for the tendency to bleeding, at least in some cases. In applying the therapeutic experiment, in many cases with a history of previous postpartums, as well as in patients with metrorrhagia and menorrhagia, and in the excesses of the climacteric, in nose bleed, etc., the method never failed me, and I came to accept this class of patients with perfect confidence that I would be able to overcome the abnormal conditions; and my results invariably justified my faith.

Most of these experiences date many years back, and at that time I concluded that the watery extract of tubercle bacilli was far more than simply a remedy for the treatment of tuberculosis. I believed that it would remedy many and varied conditions for which I knew of no connection or relation with the tubercle bacillus. The researches of recent years have demonstrated the practically universal presence of tuberculous lesions in persons living in civilized countries, and have also shown that the tubercle bacillus may and does give rise to many clinical symptoms which are as variable as they are numerous, but all of which yield to treatment with an appropriate specific remedy.

In the following I shall give a few cases from my case-book, of rheumatism, and of what I have called the "hemorrhagic condition," which will support the conclusions at which I have arrived empirically so many years ago. While I have the highest respect for research and for laboratory investigation, and while I fully realize the immense progress which medicine has made under the impetus of these methods of study, I also contend that empirical

research has its proper place and that the results of careful and exact clinical observations are entitled to consideration.

Case No. 79. Female; age, 58; weight, 105 pounds; respiration, 36; pulse, 96; very much emaciated, as she formerly weighed 160 pounds; very anemic; poor appetite and very poor digestion; bowels have been too active for months; temperature normal. Came to me in April, 1913, to be treated for deformant rheumatism. Joints in hands and fingers, also knee joints, very much enlarged and sore; also feet and toes. The patient was almost helpless, and her condition was pitiable and very grave.

I treated her for five and a half months with the watery extract, with very gradual improvement. Soon, however, her tongue cleared; appetite and digestion became better; the bowels became regular; skin moistened, and complexion cleared; strength increased. The rheumatic pains and soreness gradually became less; weight increased up to 130 pounds, a gain of twenty-five pounds, and the patient was able to take short walks to see her neighbors. She had received no medicines during the treatment.

At the end of her treatment, in September, 1913, she was able to do most of the cooking for her small family and to walk a quarter of a mile to town and then back home. She moved back to the farm in December, 1913, has been able to do her housework, and has enjoyed fairly good health. Of course, she never will be robust, but she is no longer an invalid, and, with reasonable care, there will be years of comfortable life before her.

Case No. 419. Lumbago. Boy, engaged in farm work. Has been complaining of lumbago for a year, and often lost four or five days' work on account of this trouble. After some palliative treatment, during which the attacks returned at times, the father brought the boy to me for examination, in order that I might give him a remedy which would keep the attacks off for good. He was losing too much time at the busy season. Though a comparatively vigorous boy, one could easily see that he had a latent tuberculosis.

I gave him, in all, five doses of the vaccin, in gradually ascending amounts, at intervals of seven days. Beyond a considerable soreness around the point of injection and some aching in the back there was no reaction. The patient improved from the first, and was virtually well by the time the treatment was finished. It took all the irritability and nervousness out of him; his appetite and digestion became normal; he looked and felt and worked like a new boy.

At the end of four months after treatment his health is splendid; he has gained twenty pounds, works every day and in all kinds of weather, without a break, and has had no further attacks since I treated him.

Case No. 455. Farmer's widow; age, 63; weight, 140 pounds; respiration, 20; pulse, 86; temperature, normal. Was treated in

August and September, 1914. Chronic rheumatism in left knee, with considerable enlargement; also soreness in other joints.

During the previous winter and spring she had sent to me for medicines for her rheumatism and knee trouble. This I had sent occasionally for several months. She was getting no better, and I had her come in to see me. She hobbled into my office on August 3, 1914. After examining the knee and her general condition I told her that, as she had experienced, there was no use in plying her with drugs and salves and liniments, and that if she wanted to get well I would have to treat her tuberculosis, and then, if she had any rheumatism left, I would treat that afterwards.

This patient reported improvement from the first treatment, and it was evident in her movements as she came into my office. I gave her six doses of the vaccin at intervals of from seven to fifteen days, the irregularity in the treatments being due to excessive and constant rain during the time of her treatment, as she lived quite a distance from town and could come in only on fair days. In spite of the bad weather, her improvement was constant and rapid. She is now doing splendidly.

Case No. 164. Female; age, 35; weight, 120 pounds; height, 5 feet 8 inches; respiration, 24; pulse, 90; temperature, normal. This patient came of a rheumatic family; father had deformant rheumatism. She was tall, pale, sallow, anemic, weak, constipated, nervous, irritable, easily tired, and had suffered from muscular rheumatism and indigestion for twelve years, having been treated by various physicians with quantites of drugs.

When she came to me for medcine, on August 6, 1913, I told her that I had no more for her and that she would have to take the vaccin treatment first, if I were to treat her at all. She rather demurred at the idea of being tuberculous, but consented, because she had never been really helped by drugs. I gave her five doses of vaccin in increasing amounts, at intervals of seven days. At the end of that time her tongue had cleared, liver and bowels were more active, the complexion had cleared up, strength increased, headache less severe, and the rheumatic soreness was somewhat less. She would not admit her improvement except to a very small degree, and I did not see her for fourteen months. Then, on meeting her accidentally, I found her to look so much better that I was surprised. She told me that she had improved every day since her treatment, that she did not have the grip the last winter, gained fifteen pounds, can eat and sleep well, and had lost all rheumatism and headache.

Case No. 236. Latent tuberculosis. Consolidation in both apices. Male; farmer; age, 36; height, 5 feet 10 inches; weight, 120 pounds; respiration, 22; pulse, 86; temperature, normal. Has been a sufferer for years from chronic rheumatism, with acute exacerbations of some violence. Had a very severe attack in 1912. He was sent to Mineral Wells, Texas, in 1913, for baths and treatment, remaining

there for two or three months, seriously ill. Later he was sent home, one hundred miles southwest of this place, with little improvement, in a semi-invalid condition, and unable to do any work for nearly two years. He was also said to have diabetes mellitus.

This patient was moved to a farm four miles from this town, in August, 1913, in order to be under my care. At that time his condition was pitiable and rather uninviting, and it was up to me to show my hand in a case where the old methods of treatment had failed utterly. The patient was exhausted, weak and anemic; digestion and appetite poor; nervous, weak heart, irritable; unable to do any work; unable to bend or stoop over; very despondent.

I decided that his tuberculosis was hurting this man more than his rheumatism, and discarded all medicines. I gave him fourteen doses of the vaccin during September, October and November, 1913, in very gradually ascending doses, so as to avoid any reaction on account of the weak heart; the doses were spaced from five to seven days apart. He showed improvement from the beginning and gained rapidly in every way, appetite and digestion improving, assimilation becoming restored, and the rheumatic symptoms becoming less. The patient gained ten pounds in a short time and was soon able to do some work.

One year after treatment this man looks as well as, or better than, most men. He has gained fifteen pounds more, and would have improved on that had he not worked so hard. He has taken no medicine, nor has he been sick, and has had no rheumatism to bother him. He is well in every way and has done as much work as most men, this year working a very large crop. This was in November, 1914, one year after the termination of his treatment, in which he had received nothing but fourteen doses of vaccin. He is still improving.

THE WATERY EXTRACT AND VACCIN AS PREVENTATIVES IN HEMORRHAGIC CONDITIONS.

Case No. 14. Farmer's wife; age, 31; height, 5 feet 7 inches; weight, 120 pounds; respiration, 26; pulse, 90; temperature normal; swarthy complexion; anemic; vitality low. Consolidation in both apices; latent tuberculosis. Is now in the third month of pregnancy.

Was treated for three and a half months during September, October, November and December, 1901, with watery extract of tubercle bacilli.

She began to improve soon after taking treatment and her improvement was uneventful and rapid. At the close of treatment she had gained fifteen pounds, her skin had cleared, functions were normal, appetite and digestion excellent.

In all her previous confinements (four) this woman had suffered severe postpartum hemorrhages, which were very alarming. In the

approaching confinement the family expected another serious bleeding, but she passed through a normal confinement. This woman has been confined three or four times since, and she has never suffered any more postpartum hemorrhages; she is still in splendid health.

Case No. 11. Female; age, 47. Temperature, normal; pulse, 96; weight, 165 pounds; height, 5 feet 6½ inches. Consolidation in right apex; latent tuberculosis. Very pale and anemic from excessive hemorrhages during climacteric, which has not yet been passed. Feeble and nearly an invalid.

This patient was treated with watery extract for four months, from September to December, 1901, improving from the first. Soon she was able to do some work; the excessive bleeding ceased. At the end of four months the patient was in better condition than she had been in year. She was able to do her house work; the monthly periods were normal in amount; her skin and complexion had cleared, and she had been given a new lease on life.

Case No. 39. Male; age, 16. Height, 5 feet 10 inches; weight, 120 pounds; respiration, 26; pulse, 96. Profoundly anemic. Consolidation in right apex. Latent tuberculosis.

For several years this boy had suffered once or twice a year with excessive attacks of nose-bleed, which were alarming and hard to control. After each attack he was much exhausted, and recovery was slow.

Finally, in 1904, I persuaded the father to let me treat the boy a short while to see if I could prevent the recurrence of this trouble. I treated him only thirty days, using Nos. 1 and 10 of the watery extract, so that the doses which he received were small. There has never been another hemorrhage. In 1913 I immunized this patient with the vaccin, in five doses, during which I obtained one moderate reaction. Soon after the treatment, in 1904, he had gained ten pounds. He took a full course of study at Vanderbilt University, and also managed Wesley Hall, and, in spite of this extra work, he accomplished his whole task easily and came out at the end of the year ten pounds heavier than when he entered. There has been no more bleeding.

Case No. 318. Female; age, 26; weight, 103 pounds; respiration, 20; pulse, 120; temperature, normal. Consolidation in both lungs; very nervous, thin, pale, anemic; very delicate; weak and irritable heart. Has always suffered from severe postpartum hemorrhages.

This patient was treated with vaccin for two months, in November and December, 1913. Her improvement was rather slow during the winter, but was hastened in spring. She became pregnant in January, 1914, and came to me during the spring, with her dread of postpartum hemorrhage. I told her to go home and lie down to pleasant thoughts, as she was restored for good and would have no trouble in that way. She was confined in October, in an entirely

normal labor and without excessive bleeding. One month after confinement she was heavier and looked and felt better and stronger than in years before.

CONCLUSIONS.

All these cases are offered in support of several conclusions which I had formed as long ago as 1902, from the results which I had obtained with the watery extract of tubercle bacilli. These conclusions have been confirmed during all the years since, and were further supported by my results with the vaccin.

(1) The treatment and cure of bottle-fed and ill-conditioned babies by the watery extract of tubercle bacilli is successful.

(2) The watery extract will prevent the accidents of the hemorrhagic conditions.

(3) Latent tuberculosis is an underlying cause of every case of chronic rheumatism. The rheumatic symptoms yield to treatment with watery extract and of vaccin.

SOME STOMACH (?) CASES.*

By J. T. HALSEY, M. D., New Orleans.

Every physician of experience is aware of the fact that in many patients complaining of "indigestion," "dyspepsia," "stomach trouble," etc., such symptoms, on investigation, are found to be due, not to primary disease of the digestive organs, but are simply disturbances of the digestive function secondary to disease, or disordered function in various organs. The observation of many cases seen in office and consultation practice has convinced me that many physicians, while recognizing this fact, fail to appreciate how often digestive disturbances are due to such extra-digestive disease, and, neglecting to look for, they do not find the real trouble, and consequently make a wrong diagnosis and institute a treatment often useless, or even harmful.

Whole books could be, and, for all I know, have been written on this thesis, and naturally I shall not attempt to even mention all the diseases which may simulate disease of the digestive apparatus, but will, I believe, best serve the purpose of these re-

*Read before the Medical Section of the South Texas District Medical Association in Victoria, Texas, April 8, 1915.

marks by singling out a few such of special importance and by citing a few cases.

In tuberculosis the patients, in a large proportion of cases, first consult a physician for symptoms of indigestion. I doubt if any of us are so skillful or so fortunate that we do not readily call to mind many cases treated for longer or shorter intervals for dyspepsia, in whom, after a time, tuberculosis deveolped. So often have I seen this happen that, particularly in youths and young adults, I believe that we should always be on the lookout for tuberculosis in "stomach" cases. A rapid pulse, not otherwise explained, should in such cases be looked upon as suspicious, and this suspicion will be strengthened if there be even occasional slight rise of temperature.

Among the classical symptoms of anemia are those of gastric or intestinal derangement, and yet, over and over again, I see patients who have for months, and without benefit, been dieted or dosed with pepsin, soda, HCL, etc., and in whom the use of the Tallquist hemoglobin scale gives at once the correct diagnosis, tells the specific treatment, and is the means of attaining a prompt cure. In the essential anemias a few minutes spent in examining a blood smear enables us at least to make the correct diagnosis, give the proper prognosis, and do the little good possible for the patient, at the same time sparing him unnecessary and useless expense.

In this part of the world anemias suggest hookworms, and these, in turn, direct our attention to other intestinal parasites. I, and I am sure many or all of you, can at once call to mind cases of digestive disturbances unrelieved until the presence of the parasites was demonstrated, when the specific treatment was followed by prompt disappearance of the indigestion.

If time and space permitted I could cite case after case of "worms," in which the dyspepsia was so severe as to suggest the advisability of surgical relief for ulcer or gall-bladder or appendiceal disease. Examination of the blood smear is often all that is necessary to get on the right road to the correct diagnosis and the successful treatment of such cases.* A case in the practice of my colleague, Dr. Bethea, illustrates this so strikingly that I

*In this connection it is worth while to remember that round worms are not infrequently found in appendices at operation, and that they probably are in such cases the cause of the trouble.

think it worth while to briefly describe it. A woman came to him recently in great distress, saying that she had just been told that she had appendicitis, and must be operated upon at once. On her way to the hospital she was advised to see Dr. Bethea. To make a long story short, while the case resembled one of appendicitis, a blood smear showed a high percentage of eosinophiles. A purge brought away tapeworm segments; pelletierine brought away the worm, and all the symptoms cleared up.

Pelvic disease, which has not manifested itself to the patient, or about which, with a natural reticence, she is silent, not infrequently is responsible for such stomach symptoms as heartburn, epigastric pain, or even nausea or vomiting. If the pelvic condition is not recognized, all therapy directed to the stomach proves useless, while, if the pelvic condition is recognized and relieved, the gastric symptoms disappear. Gastric upsets are the most common of the recurring illnesses in children, and are usually attributed to acetonuria, indicanuria, dietetic mistakes, etc., according to the point of view of the family physician. I am convinced among the commonest causes of such recurring upsets are our old friends, diseased adenoids and tonsils. Their discovery and removal is all that is necessary to transform the "weak digestion" (?) into a normal one.

Nausea and vomiting due to irritation or disease of the internal ear or labyrinth is rather rarely met with, but is, I believe, less rare than is generally recognized. The extreme importance of its recognition justifies my mention of it. It is especially to be emphasized that in a case of chronic or acute suppuration of the ear, vertigo, nausea, and vomiting, are signs of irritation or actual involvement of the labyrinth, which, as you know, is separated from the meninges by bone of only paper-thickness.

The following case illustrates the importance of remembering this:

An elderly woman had been suffering for three weeks with frequently recurring nausea and vomiting, so that during this period she had retained little or no food and had become very weak. The patient had had for years a high blood-pressure, recurring attacks of tachycardia, and not infrequently attacks of heartburn or gastrodynia. She had also, since childhood, a chronic bilateral otitis media. The present attack was considered to be only an aggravated recurrence of her former indigestion, probably an expression of circula-

tory incompetence and indicanuria. During these three weeks the patient had become very deaf, which she attributed to the vomiting having "forced matter into the ears." Examination failed to show evidence of circulatory incompetence, but did show loss of bone conduction and complete deafness on one side, also occasional nystagmus. The patient also complained of a very distressing and intense vertigo. To make a long story short, she showed signs of labyrinthine irritation, and was promptly and completely relieved by local treatment of the ears.

An interesting feature in this case was that, during the period of gastric distress, the patient had two attacks of paroxysmal tachycardia, one of which lasted over twenty-four hours.

The cardiac features of the above case bring to mind several cases of paroxysmal tachycardia, in which the attacks were attributed to gastric disturbances. Such errors are not so inexcusable as they may at first thought appear, for attacks of paroxysmal tachycardia not infrequently follow gastronomic excesses, and the subjective symptoms are not infrequently those of epigastric distress, with distention of and pain in the stomach. Further, they often terminate with an attack of vomiting or with the belching up of large amounts of gas, which is followed by a sudden slowing of the heart and complete relief of the symptoms. I have so frequently been deceived, at least for a time, and have so often elicited this history in such cases, that I am convinced that tachycardial attacks are often mistaken for acute indigestion.

It would not be correct for me to consume time of this Society in speaking of renal and cardiac diseases as causes of gastric symptoms, while appendiceal and gall-bladder disease have so often been discussed in this connection that they need no mention. "Nervous dyspepsia" is the commonest type of indigestion which we meet with, and usually presents no pitfalls, even for the unwary, but now and then it masks a condition of hyperthyroidism or of organic disease of the central nervous system, overlooking which may prove disastrous.

Lastly, syphilis may mask itself under the innocent guise of gastric disturbance of most intense severity. One of my own disastrous failures illustrates this most strikingly, and is therefore reported:

In 1907 a white girl was referred to me by a physician from the interior of Louisiana. She had been suffering for more than a year from epigastric distress or pain whenever she ate, and nearly everything that she ate was promptly vomited. On account of her pain

and vomiting, her diet had been cut down to a few spoonfuls of gruel a day. She was painfully emaciated and weak. Family history was as follows: Father and mother healthy, many sisters and brothers living and well, mother had had no miscarriages. Physical and stomach examination gave no clue to the cause of the trouble. A diagnosis of "Anorexia nervosa" was made; a rest cure, with liberal feeding, was started, and continued for several weeks, with considerable improvement. At the end of this period, although the patient had gained fifteen pounds, vomited only rarely, and was taking a sufficient amount of food, homesickness forced the interruption of the treatment. Shortly after returning home the patient relapsed and was soon as badly off as ever. Some months later she came back to me and, in the face of negative clinical and chemical examinations, I advised an exploratory laparotomy, which disclosed nothing abnormal anywhere in the abdomen. The patient died some months later of inanition.

Several years later, 1912, the girl's father brought to another physician of New Orleans two other children suffering as had their sister. All methods of examination failed to explain the condition until, as a shot in the dark, the, at this time, recently discovered Wassermann reaction was tested and proved strongly positive. Antisyphilitic treatment brought about a startlingly rapid and complete relief of all symptoms.

Time and space permitting, it would be possible to mention other causes of indigestion and to cite illustrative cases for each, but I believe I have said enough to emphasize the importance of remembering that in the majority of cases the digestive apparatus is not primarily at fault in cases presenting themselves for the relief of so-called stomach symptoms, and to stress the necessity of general and systematic examination in such cases.

THE MEDICAL CAREER.*

By ISADORE DYER, Ph. B., M. D.,

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The student who contemplates at this time a course leading to the practice of medicine has much to ponder.

The day of the apprentice is over; the pabulum projected for the ingestion of the student now and in the near future is more than the mental capacity of the ordinary student and it promises to tax the better ones.

*President's Address, Association of American Medical Colleges, Chicago, February, 1915.

The writers on medicine to-day deal in terms which are foreign to the student of two decades past and every year new terms creep in needing classification, even for contemporary students. The revolution has come with the concept of the microscopic field and its interpretation and the alignment of the many phases of scientific medicine has not yet come about. There is still much disorder.

The history of medicine is full of genius sparking in the field of nebulous uncertainty and clearing a way to scientific development. At times modern concepts have been anticipated. Barely a century has been needed to develop the microscope and its possibilities; less than half a century has made the invisible world of microbic organisms an open book with a well-nigh accurate familiarity with the habits and purposes of a large group of these bodies.

Literature has amassed volumes of research and facts have accumulated so fast that they are still not altogether co-ordinated.

Speculation has given way to specific knowledge in the cause, treatment and prevention of ancient diseases to the end that these most potent enemies of mankind have one by one yielded to the measures derived from the laboratory, until only a few are left.

The purposes of the medical profession have changed. Even though the cupping basin still hangs in out of the way places as the emblem of the barber's erstwhile practise, the progress in medical and surgical procedure has moved on into higher and broader planes.

The early mysticism of the chemical laboratory has gone forever and the symbolism of combined elements has developed a usefulness which reaches into almost every field of modern medicine. The formulæ of bacteriologic invasion mimics the organic compounds, and in the symbiotic processes the chemistry of nature expresses itself in new combinations. Physiologic functions proceed by chemical changes, and the very pathogenetic function of disease may be defined in chemical terms. The ions of newer concept make for finer appreciation of natural changes in tissues and as the higher processes of structural development or degeneration occur split products of chemical interpretation bear their parts.

The anatomist has a new viewpoint in the study of tissue and

as the central nervous system, the ductless glands, including the marvelous pituitary with its power of balance, open up more and more the secrets of their functions, our knowledge of the human economy and its possibilities will change.

The analysis of disease in Fothergill's day was based on gross evidence, determined by observation and the deductions warranted by experience. To-day the blood picture and the culture tube save time in the reach for a diagnosis and the man who is not trained to either misses the definite determination of his case.

Therapy is no longer based on empiric practise, though drugs still survive. Antagonistic similars are potent in overcoming zymotic types of disease and in preventing some of them. Vaccins and sera have grown into daily use and so wide a range have they covered in their polyvalent function that there is a possibility of reducing all such remedies to a small code of practise.

The development of civilization has brought about new diseases or new types of old diseases, and old diseases have laid lines for variations several times removed from the prototypes and in these multifarious opinions and investigations have arisen and will arise.

The purviews of medical practise have extended beyond the mere care of the sick. The State has created new fields of activity in contemplating sanitation and regulations in public health, requiring more and more expert training to satisfy the needs of the newer function.

The food supplies, the disease index, the eleemosynary institutions and even the proletariat fall within the practise of the State's solicitous concern.

Not only hospital care of the sick has obtained through the interest of the State, but even care of those sick in their own domiciles have been considered as falling under the obligation of the State in some places.

The limitations of the State policy and power along these lines are not to be measured just now—time alone may tell. The gradually increased and increasing power of the Health Board, however, argues that the possibilities of usefulness of the State are great, and that they may be much more far reaching than at present.

In the United States we have been engaged now several years

in debating standards of medical education. From the agitation have evolved more or less certain opinions, fixing desirable conditions under which graduates in medicine should be qualified to engage in the practise of the profession. Curricula have been weighed and measured to fit the case and more or less arbitrary entrance requirements have been agreed upon, with reservations as to a possible adjustment when the accepted regulations have been tried out. Much of the reform has been necessary and the results have proved this, for undesirable medical colleges have expired and more worthy colleges have reformed. Everywhere new standards prevail and medical education has moved to a higher plane.

In methods of teaching and in equipment all colleges have materially improved and a newer concept of medical education has come about. The scientific development of all the component departments of the schedule has necessitated better teachers, with special training in many branches needing more attention.

The result is now evident: The college course is so crowded with work that the allotted time is not sufficient to satisfy the various departments in their projected instruction. More time will soon be needed.

Those who are engaged in regulating the standards of medical education are not yet certain of the plan nor of the scope of the required education necessary to qualify the intending practitioner in medicine.

All have been willing to concede the cultural advantage of previous college training and in the end results the student who has finished a college course with an accredited degree will derive most from his medical course; as his college course has been more or less, he will proportionally profit—but are we altogether satisfying our obligations in making standards for the exceptional instead of for the average student?

In most of the discussion of the regulations and standards, the viewpoint usually paramount has been the demand for better and higher training; the student has not often been discussed.

Formerly the practise of medicine was largely vocational—the reasons of the student engaging in the study of medicine being varied, but, for the most part, through an inspiration to follow a calling, because of its traditions. The practise of medicine has never suffered from that class of students. In the net results of

the graduates in medicine, about 40 per cent. would quit within a few years after leaving the medical school.

It was possible to acquire the preparation for practise in three to four years and it often happened that a man gained a medical education after he was mature in worldly experience, being thus able to satisfy a delayed ambition.

To-day the requirements in medical education make these things impossible.

The intending medical student hereafter will more than ever weigh the question of his calling—because of the conditions confronting him. More than ever he must have an inherent and earnest proclivity, for no one of the professional careers open to a young man offers a harder road, attended with greater outlay in time and in money, than that of the study of medicine. His prior preparation is more exacting than in law or in engineering and his actual curriculum is also more exacting; even when he is through, the examining boards will likely soon require a hospital year, and if he is properly cautious he will want more experience before he accepts the responsibility of his profession.

The expenditure of almost half an expected lifetime in preparation for a career should warrant a return worth while.

What may the student expect?

For a livelihood, the practise of medicine brings in slow return, depending on location and opportunity. Success is laggard, as a rule, and even when emoluments balance expenditures, the profit in the practise of medicine is not considerable. The exceptional physician may grow well to do through fortunate investment, but, outside of the larger cities, few get rich.

For scientific interest the field in medicine is large, and the reward comes in achievement, but the compensation otherwise is negligible. Problems of all sorts develop for the laboratory man as well as for the clinician in medicine and their solution is worth while, but not profitable.

The lines of least resistance have appeared to be in the specialties, where larger fees may be demanded and where more or less ignorance may be disguised in technic.

The intending medical student should know these things and he should be told things. Too often the pack blindly follows a

lead and only when it is too late the young man realizes that he has spent himself for nothing.

The phases of a medical career are many and only some of them have been touched here—and the subject has been chosen and has been discussed with one prime object which shall be considered in the conclusion of this address—*What is our obligation as educators and what are we doing to make the medical career worth while?*

The review of the published announcements of most medical schools discloses the fact that the contents aim solely at indicating the requirements made of the student before he begins the medical course and submits the demands to be made upon him while he is so engaged. At no place is there any discussion of what he may expect thereafter.

In old-time essays or texts on medicine there was rather full discussion of the opportunities as well as the hardships to be expected and even while the field of medicine was barely covered its limitations were defined. Medieval medicine was a mixture of practise and of ethics, and even John of Gaddesden may have been a better doctor because he took time to learn theology, too. Our medical student is run through a mold in common with his fellows and only when he later on grows into a larger usefulness does he begin to know his subject.

During the past ten years there has been agitation enough, even unrest, with the result that the ideal medical course has been sought by all honest schools. The direct effect has been a marked increase in the cost of medical education, not only to the student, but to the medical school itself; efficiency has been purchased at an expenditure in budgets entirely out of proportion to the income derived from students. Some State institutions have met the demand by sufficient appropriations to cover the greatly increased cost of medical education, but other States and more institutions have been put to careful financing to come out with even small deficits.

The student is already aware of these things, and has weighed the prospect of a more expensive medical course from now on.

The efficiency is, after all, the chief purpose in medical education, so far as training the student is concerned. To this end faculty provisions take care of the more erudite or better trained

teachers, and the number of teachers on the staff make for a better training of the student.

But when the student has satisfied the required courses, has he had the best medical education we can offer him? Is he qualified as a physician?

In summing up the deficiencies in medical education in the United States a few years ago, methods here were compared with those abroad, and to our disadvantage.

Yet, from time to time, considerable American criticism has arisen, because in many foreign countries the course in medicine requires all of six years. Our best schools concentrate in four, and, in revising the system, plan a hospital year and more of early preparation to make up the discrepancies.

The examination of any student body at any part of the present accepted curriculum finds most of the students rather half-baked, and with a corrollary complaint from most of the teachers that courses are not long enough to give the student necessary instruction.

The branches related to the so-called special subjects are either neglected or discounted, and the medical graduate is put through on a limited schedule, with the suggestion that he may take up the special subjects *after he is graduated;* in other words, he may make his education as a doctor complete *after* he has become a doctor.

In a few schools the lack of sufficient scope in the so-called special subjects is compensated by an elective fourth year, in which the individual student may stress a particular field, making other subjects more or less minor.

We are really at that point in medical education where the student and his training should be reconsidered. Our present plan is too much inclined to make of the present graduate a predestined specialist, dissatisfied with the prospect of the drudgery attaching to a general practise. This is already evident in the overcrowding of the profession in the larger cities, the gravitation of young men who find no content in country practise.

Our curriculum should be broadened so as to finish the preparation of the student for general practise, with enough training in special branches to permit the care of ordinary cases and to

prevent the common confession of most physicians that "I know nothing about the diseases of the eye, or of the skin," etc., reflecting seriously on their qualification as physicians.

The abandonment of the field of general practise has been a natural outcome of a deficient general training, and the deficiency has resulted from an obvious lack of time in the schedule provided in a four-year course.

Whatever adjustment comes about should be weighed well, and the point of view of the one most interested, the student himself, should enter largely.

The medical career should be a more desirable choice now than at any other time in the history of medicine, but the argument of opportunity alone should not be sufficient; there must be a future consideration of the element of reward—and of compensation—to make the career worth while.

OBSERVATIONS ON THE USE OF CHLORETONE IN A CASE OF EXTENSIVE BURNS OF A CHILD 12 YARS OLD.*

By W. P. BRADBURN, B. S., M. D., New Orleans, La.

In presenting this paper, I wish to express my thanks to Dr. E. D. Martin for his permission to report this case which was seen in his service at Charity Hospital during my internship. Again I beg to acknowledge my indebtedness for Dr. Martin's encouragement in the study of the clinical side of the case.

I regret that I am unable to report observations on more cases of a similar nature, thereby making my deductions of more value, but since this case, I have not had the opportunity to outline the treatment in cases of extensive burns, yet it is hoped that the following data may be of some aid in the handling of similar problems.

The history is as follows:—

Colored female, aged 12 years, was brought to the hospital on March 3, 1914, suffering from extensive burns of the back, thighs and hands. Child had been playing with fire in the street, and clothing caught fire, the above named burns being sustained before it could be extinguished. When seen in the accident room, a dressing of borated vaselin was applied. Morphia, grain 1/12, had been given; this was at twelve noon.

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About the time that this case came to the Hospital, the use of chloretone was being exhibited in the treatment of burns in the children's wards. It was applied there, I believe, in the following manner:—A dram of choretone was dissolved in a quart of water; dressings were wet with this solution and applied to the burned area; relief of pain is claimed for this method.

Favoring the open treatment of burns, our usual routine treatment consisted in a saline bath, followed by the dusting of the burned surface with compound stearate of zinc, and the patient, without clothes of any description, was put to bed between sterile sheets. The bed-clothes were held off the patient's body by means of a frame which extended about one foot and a half above the surface of the body. These saline baths were repeated once or twice daily, and the patient allowed to remain in them as long as she felt comfortable. The temperature of the water was about 100° to 110°. After each bath, the usual dusting with zinc stearate.

It occurred to us in this case to try the chloretone, but not being in favor of dressings, we decided to apply the dry powder directly to the burned surface, using the compound stearate of zinc as a vehicle. This was done accordingly. The notes show that the child rested fairly well until 6:30 A. M. She was then reported as "very restless and complaining; pulse weak and thready." From this time until March 6, the child was reported as "resting very well," and appeared to be in a stupor nearly all the period, having to be aroused to nourish.

Repeated examinations of the urine during these days were negative. The cause of the *stupor* was sought. Upon questioning, it was learned that the chloretone and zinc had been mixed in equal parts by *volume* and not by *weight*. The exact dosage of chloretone which the child had been receiving during these days could not be estimated. Therefore, it was decided to omit the chloretone in the dusting powder on the night of March 6. The next day, the child "nourished better," and the following day, "nourished well."

We then came to the conclusion that the stupor had been due to the heavy dose of chloretone which she had been receiving.

To determine definitely if the chloretone had been responsible, we decided to wait several days and then to re-apply the chlore-

tone. On March 12, the use of chloretone in definite dosage was commenced. Ten grains were applied to burned area, and the notes show that the child "slept within an hour." On March 13, the following day, the same amount was again applied. The notes read "rested and slept a long while." The length of time for the chloretone to have effect was not recorded. March 14, ten grains applied at 10:30. Observation—"Did not sleep until one hour after application of the powder; was then very quiet and slept a long while."

Having shown definitely that the chloretone was absorbed and produced a constitutional effect, we began to try the effect of larger and smaller doses than the ten grains.

Our observations showed that five grains would produce a local analgesic effect; little if any constitutional action being observed. When fifteen grains were applied, the child was thrown into a heavy sleep, nearly approaching the stupor of the first few days after the injury, the period that the child had been receiving the large doses of chloretone.

Further history on the case shows that after my leaving the ward as intern, several skin-grafts were done by Dr. A. C. King, the last one on August 4, 1914. On August 10, the grafts were in good condition. On August 24, the child was discharged from the Hospital and sent to the clinic for further treatment.

Conclusions:—If we may make deductions from this case, they will be as follows:—

1. Chloretone applied as a powder is absorbed directly from the burned area.
2. The dosage may be so regulated that it is possible to obtain a definite action.
3. We believe that pain can be appreciably lessened, and proper rest and sleep obtained for our patient.
4. That it will markedly reduce the number of injections of morphia.
5. Its early use may be of some value in the lessening of shock.
6. That a *definite dosage* should be administered and mixed with some other powder as a vehicle. We prefer the compound stearate of zinc as it seems to come off more

readily in the bath than any other dusting powder that we have used.

7. That the essential thing, in order that we may not hinder the action of the chloretone, is the daily, or twice daily, bath.
8. That for each case a definite dosage for the desired effects should be established, until further data are obtained in this method of administration, and that fifteen grains be the maximum in a child of twelve years to produce stupor, and that an increase in this dosage be administered only after it is found that it is insufficient to bring about the results desired.

DISCUSSION OF DR. BRADBURN'S PAPER.

Dr. L. J. Genella: Many years ago barbazine gauze, a proprietary preparation of unknown composition, was in vogue. Being composed of butter, wax or tallow gave it the property of not adhering to granular tissue, and so it did not destroy the processes of repair. I believe it, like many other good things, is little used now.

Dr. Urban Maes: We have always been looking for an improvement on our present treatment of burns. Up to this time we have had better results from the use of picric acid as an immediate dressing. This is continued on account of its analgesic effect for four or five days when the granulations have sprung up, and the raw surface is protected by exudates. After this we depend on the open air treatment combined with a liberal supply of sterile talcum powder. A frame is put over the patient to prevent contact with the bed clothes. Drs. Martin and Bradburn's suggestion to use chloretone seems to me very good for its analgesic effect, for this is certainly a most painful injury and any addition to our armamentarium which will relieve pain is welcomed. Fifteen grains is suggested as the average dose, and I would like to ask the essayist if it matters as to the surface to be covered by this amount of chloretone.

Dr. S. C. Jamison: Does chloretone act as a general anesthetic?

Dr. Bradburn: The frame used is that recommended by Dr. Maes. The effect from 5 grains was a relief of pain with very little constitutional effect. From 10 grains there was one hour before the slight hypnotic effect was noted. With 15 grains there was a more prompt and intense constitutional effect.

THE DRAINAGE OF THE ABDOMINAL CAVITY.*

By A. JACOBY, M. D., New Orleans.

A surgical fetish and one that will die hard. Some will say that is a young man of little experience and others will add that the suggestion is from one with poor judgment. But there are a few—a very few perhaps—who will agree with the essence of my paper, and I feel that there are more who either believe and have not expressed themselves or are afraid of taking the initiative. But I state without hesitation that, if the next five years show the same tendency as the past five, there will be no abdominal drainage. Look back a few years, and even with some to-day, and see how long tubes were left in the abdomen, and yet the majority of those who stand highest in the surgical world consider forty-eight hours more than sufficient. It was the same fight when the suggestion was made to remove the appendix in appendiceal abscesses or ruptured appendices, and yet there are some excellent men who still drain the appendiceal abscess and wait till some future time to take out the appendix—a risk to the individual and the danger of another operation attach. But these are comparisons and we are dealing this evening with drainage of the abdominal cavity.

The question is one also which appeals both to the general practitioner and the surgeon as well, because it means earlier and quicker results in abdominal surgery. It is one also that will give food for thought and discussion, and I bring it before you, therefore, with the hope that the members will discuss this subject with all fairness to the writer.

I have been for some time an advocate of no drainage of the abdominal cavity, and when I say this, I mean the abdominal cavity. For one must understand that there is a difference between drainage of an abscess sac in the cavity and the cavity itself. One can see the chaotic state of this question when the number of drainage tubes are advocated as well as the different locations.

Now let us see what the abdominal cavity is. It is a large ovoid space situated between the thorax and the pelvis. It is filled with intestines and omentum to the greater proportion, and it is these

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that interfere with abdominal drainage. The location of drainage openings must be considered from the standpoint of the most dependent part of the cavity. In the female the best location is in the pelvis, the tube being placed behind the cervix and emerging from the vagina. In the male, however, the only manner to secure dependent drainage is by a tube inserted in the anterior wall of the upper third of the rectum and emerging from the anus. The favorite places, however, of those who drain the abdomen—except in female pelvic disease—are just above the anterior superior spine of the ilium, a point just above the bladder in the mid line, and in Petit's triangle just above the crest of the ilium and behind the anterior superior spine. How it is possible to drain a large cavity with tubes in these positions and the patient in the Fowler's or half-recumbent position is beyond me. It strikes me that the pus would be found in the pelvis of the individual, not at the sides or the center of the abdomen. Now what happens when we place our tubes? Many times, as evidenced by post-mortems on cases upon which this procedure has been carried out, the tubes are found pointing in the opposite direction to which they have been placed, and every time they have been found to be walled off by adhesions of small intestines and omentum. And when the tubes are left in for any length of time, either in contact with the large intestines or small intestines, a fecal fistula frequently develops. This also occurs where the bladder is in contact with the tube, a bladder fistula developing. Fortunately, they all close after a time. It must, therefore, appear doubtful in the minds of most observers of abdominal drainage whether drainage can be established either by the location of these tubes or by their size, usually one-fourth to one-half inch in diameter. Some of our surgeons use a Miculicz drain; that is, a drain made up of gauze and surrounded by rubber tissue. They claim that it makes a place of least resistance and is not as dangerous to the bladder or bowels as a tube. However, this drain is considered by the great majority of surgeons not as a drain, but as a plug, and is used to stop hemorrhage. It swells up almost immediately and plugs the opening completely. It is the futility of abdominal drainage that has made many surgeons give up the Fowler's position, because it not only increases the work of the heart, but probably also increases the tendency to ileus.

One of our greatest surgeons said some years ago that if you wish to drain the abdominal cavity, open the abdomen wide, place a pad of gauze underneath your incision, put through and through silk woven gut sutures, close together through the abdominal wall, and tie them loosely. After applying a large, copious dressing, turn your patient on the abdomen. In forty-eight hours take out your pad of gauze and tie your abdominal sutures. This is the only way to drain the abdominal cavity.

The observations of a few noted surgeons along these lines may not be amiss, and these quotations could be added to in large numbers. In Bruphy's Year Book of Surgery, 1913, we find these two quotations.

Bauer, in the *Archiv. fur Klinische Chirug.*, Dec., 1911, says that his excellent results are due to small incisions, rapid search for and abolishment of the cause of peritonitis and closure of the abdomen without drainage whenever possible. His figures are 115 cases of appendiceal origin, with 11 deaths—67 of these had not been drained, with five deaths. In other words, there were less deaths by far in the cases that were not drained. In fourteen, due to perforated ulcer of stomach or duodenum, there were four deaths, and ten of these were not drained, with two deaths. Ten cases, due to ruptured pyosalpinx, one died, and five of these not drained all recovered. In thirteen cases due to various causes, typhoid perforations, etc., there were six deaths; six of the thirteen had not been drained, and three of these died. Scheidman, in the *Deutsche Med. Wochenshr.*, August 29, 1912, gives 151 cases of diffuse peritonitis operated upon; 121 were not drained, with 20 deaths (16.5%), and 30 were drained, with 12 deaths (40%). Murphy in commenting on these results says that it must be taken into consideration here that the drain was used in the most severe cases and that deaths were caused despite the drain, and not caused or favored by the drain. He says further that it depends upon the form of infection whether we should drain or not. Despite his statements, the results are certainly so far superior without drainage that one cannot help but consider them in their future operative work. Mayo says that we cannot drain the general abdominal cavity for more than a few hours by a drain of any kind, because the foreign substance is walled off by union of the peritoneal coats of

the abdominal organs. As an instance, we formerly attached the gall-bladder in a cholecystotomy to the peritoneum to prevent leakage when the drain was removed, but we know now that the tube is completely surrounded by adhesions in a few hours. It is, therefore, with this idea in view that I suggest the plan of draining the small bowel in the cases of general peritonitis or pus in the general cavity by means of a Pezzer catheter. After opening the abdominal cavity, cleaning out the pus, and locating if possible the focus of infection, the small intestine is brought up. Then two linen sutures are placed parallel to each other, a hole cut between the two, and the catheter dropped in. The sutures are then tied together, and reinforced by Lemberts if desired, and the bowel dropped back into the cavity.

The error of drainage of the abdominal cavity is due to the belief that the absorption of pus or the end products of the invading bacteria is the cause of death. But such is the case only in streptococcic infection when no plan seems to be of any avail. Death is due to absorption of end products from the small intestines, and this is overcome by intestinal drainage. In this way the bowel can be washed out and the patient fed, if need be. The results have been so excellent in other abdominal conditions, especially in intestinal obstruction, that I cannot help but feel that many lives will be saved by the method suggested. My regret is, that I have not had the opportunity of trying out this procedure, which I shall certainly do whenever the occasion presents.

DISCUSSION OF DR. JACOBY'S PAPER.

Dr. Urban Maes: Dr. Jacoby has brought before us for discussion a very important subject. It has been my conviction for some time that it was impossible to drain the entire peritoneal cavity, but we can and should drain the most dependent portions of the cavity as represented by the two kidney fossæ and the cul de sac. By avoiding accumulations in these regions, where fluids naturally gravitate, we guard against the formation of residual abscesses. Drainage of the peritoneal cavity has been overdone when we consider some of the recent experimental work. The toxemia does not originate from the peritoneal cavity as was formerly taught, but from the lumen of the gut. Drainage, therefore, to be effective, must drain the lumen of the gut and the cavity should be drained in face of local accumulations of pus.

Dr. Gurd, formerly of this city, has published some very interesting experiments showing that the toxic substance in cases of paralytic ileus had its origin in the mucosa and not in the intestinal contents. These experiments tend to show that the poisonous substance is a split proteid, and not a bacterial toxin. Having been convinced that drainage of the lumen of the gut was more important than drainage of the cavity in peritonitis, I have used a procedure taught me by Dr. Parham, viz., to purse string a Pezzer catheter in the most distended coil of bowel which presented itself on opening the abdomen. I feel certain that I have saved some lives by this procedure.

Dr. E. D. Martin: I am very glad indeed that Dr. Jacoby has introduced this subject. It is not new, however, as we have been carrying out this treatment for many years and have reported a number of cases. I believe that Dr. J. W. Long, of Greensboro, North Carolina, deserves much credit for introducing and popularizing enterostomy. I do not agree, however, with the essayist in his suggestion that free pus in the abdominal cavity should not be removed before the introduction of the Pezzer catheter. I believe in the Fowler's position and pelvic drainage when fluid is present, or of any localized abscesses, for whereas I have faith in enterostomy, my faith would not allow me to depend solely upon it for the drainage of the peritoneal cavity.

Dr. Jacoby, in closing, said:. That the paper had reference to abdominal drainage and not drainage of any special region of the abdomen. The suggestion and the plan of closing the abdomen in general infection of the cavity was gaining adherents among the best surgeons and some of the foremost surgeons had been pursuing the plan for the past few years.

REPORT OF A CASE OF PURPURA HEMORRHAGICA, WITH AN ACCIDENTAL COMPLICATION FOLLOWING THE SUBCUTANEOUS USE OF HORSE-SERUM.*

By RANDOLPH LYONS, M. D., New Orleans.

This case is reported not so much because the disease is an uncommon one, but mainly because of an accident which occurred from the subcutaneous injections of horse-serum. While I fully realize the incompleteness of this report, my excuse in presenting it lies in the hope that it may prove of value to others in avoiding an unfortunate accident which might well have terminated fatally.

The history of the case is as follows:

The patient, Washington C., was a colored man of 39 years. He

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was admitted to the Charity Hospital on November 11, 1912, complaining of bleeding from the nose and gums.

There were no "bleeders" in the family as far as he knew. As a child he had measles, mumps and whooping cough. The patient states that he has always been subject to nose bleed which occurred two or three times a year but were readily controlled. When asked whether after an accident he had ever noticed that he bled more than other individuals he said that he did not. He has had frequent attacks of malaria, the last attack eight years ago. Seven years ago he had a sore on the penis but no secondaries. The patient drinks moderately and has lived all his life, until the past two years, in the country. Since boyhood he has always been employed on jobs which exposed him to high temperatures (kilns, boiler-rooms, stoker, etc.)

When the present attack came on he had been working where there was considerable steam and the temperature was high. Four days previous to admission to the Hospital he thought he had a little "gum-boil" on his lower jaw. The "boil" gradually increased in size and became more painful until the night of the tenth (four days later), when he decided to open it by squeezing it with his fingers. The "gum-boil" suddenly burst and blood spurted from it but the gum continued to bleed. A few minutes later his nose also started to bleed. The bleeding from both nose and gums persisted during that night and the next day. The hemorrhage while not profuse was a steady, uncontrollable drip. That night the patient was admitted to the hospital. He complained of slight weakness but no pain. His bowels were constipated.

The following morning (November 12) I examined the patient who appeared to be a rather intelligent, light-colored negro of medium size. He weighed about 150 pounds and was well developed and nourished. His mucous membranes were a little pale. The gums were spongy and oozing. Attached to the lower gum anteriorly was a hard, non-retracted clot. Blood was slowly trickling from his nose; non-retracted clots were visible in both nostrils. His temperature was normal; pulse 70 per minute, regular and of good volume; blood pressure 145 (Tycos). The vessel wall was thickened. Heart and lungs negative. Abdomen negative. Urine examination negative.

Course and treatment: On the night of admission the patient received 10 c. c. of sterile horse-serum by needle in the lower abdominal wall. This injection was administered by the House Staff and the site of the needle puncture was sealed up with collodion.

November 13. Today the bleeding from the gums has stopped but the hemorrhage from the nose continues. Both nostrils packed and peroxide of hydrogen applied to pack. A second injection of 10 c. c. of horse-serum was administered by the intern. The patient was put on calcium lactate, gr. 15, every three hours, fluid extract ergot, one dram every four hours.

November 14. The patient seems considerably weaker. Oozing of

blood still continues from nose in spite of packs. In the morning he vomited a large amount of blood followed by a short syncopal attack. Temperature, 98; pulse 90, weaker; blood pressure 100. Posterior nares repacked and saline enemata (to be retained) were given every six hours.

November 15. Patient restless during night and had to be given morphia twice. This morning he appears drowsy, very weak. Temperature normal; pulse 120, weak and thready, of low pressure; mucous membranes markedly pale. Bloody oozing from nose persists. On examining the body part of the upper half and all of the lower half of the abdomen was found to be black and blue from subcutaneous hemorrhage especially marked about the sites of the injections of the serum. A few small, purpuric spots can be observed on the front of his chest. Both legs show a symmetrical, petechial eruption—the lesions are very numerous (the legs look speckled) and vary in size from a pin-head to a pea; deep red or purple in color and do not fade on pressure. The skin between the lesions is normal. The lesions rapidly decrease in number above the knees. Few, discrete spots are to be seen on lower half of thighs. The upper third of both thighs present large ecchymotic areas continuous with that on abdomen. Penis and scrotum swollen and purpuric.

November 19. There has been no bleeding for past three days. Pulse 100, stronger. Patient states that he feels better. Lower half of abdomen feels hard and is tender. His nose bled a little this afternoon.

November 20. No further bleeding. Patient's left side of face and left ear markedly swollen and sore. Some deafness in left ear. (According to Dr. C. A. Weiss this was caused from the pack remaining too long in left posterior nose.) Petechial eruption on legs beginning to fade.

November 21. No more bleeding. Temperature 98.2; pulse 100; blood pressure 105. Blood examination: When ear lobe is punctured with stylet bleeding time is less than one minute (Duke's method). Coagulation time, 7 minutes. Hemoglobin 55%. Differential count: Polynuclears 85%; small lymp. 13%; large lymp. 2%; 8 normoblasts noted; marked poikilocytosis and polychromotophilia. 300 cells counted. No eosinophiles found after a much longer search. There was an "apparent" leucocytosis. Blood platelets were present but few in number and small. No clumps.

November 22. No further hemorrhage. Patient's general condition about same. Calcium lactate reduced to 10 grains three times a day. Tincture of ferric chlorid, gtt. xv, t. i. d. Temperature 100.4°. This is the first occurrence of fever. Swelling of left ear and face much diminished. Patient still complains of some impairment of hearing in left ear. Infiltration and inflammation of lower half of abdomnal wall sufficient cause for temperature and leucocytosis.

November 26. Patient has been running a moderate, irregular temperature. Abdominal wall soft and fluctuating in large areas. An incision was made over a fluctuating area and a large amount of pus evacuated. Patient's hearing in left ear much improved. He was transferred to surgical ward. From this time on the patient had an irregular septic fever until December 5. During this period another pocket of pus was found in the abdominal wall; an abscess developed on his right arm and another on the front of the left leg. All were opened and drained. In addition to this both ears discharged pus.

December 2. Calcium lactate was discontinued.

December 5. Nose bled for twenty minutes.

January 3. Patient has had no further temperature or suppuration since December 7. Feels stronger and has been up and about for a week. Blood examination showed: R. B. C. 4,184,000; hemoglobin 80%; color index, .97; leucocytes, 11,608. Differential: Polynuclers 64%; small lymph. 18%; large lymph. 15%; eosinophiles 1%; transitionals 2%. Blood platelets numerous and in large clumps. No nucleated red cells. Moderate poikilocytosis and polychromotophilia. Abdominal wall still shows some small, indurated areas.

January 4, 1913, discharged.

Patient was seen ten days later at my office and seemed much improved. Lower belly wall still hard in small areas. Blood examination revealed: R. B. C. 4 400 000; hemoglobin 85%; color index .96.

SUMMARY: To summarize briefly, we have to deal with a negro man of 39 years, who, in apparently good health, developed a severe hemorrhagic condition. Etiologically there is nothing in the family history to suggest hemophilia. In his personal history we find that he has been working since boyhood at occupations which exposed him to high temperatures and has been subject to two or three nose-bleeds a year, which are, however, readily controlled. He has had several attacks of malaria, but none for the past eight years. More significant is the history of a probable syphilitic infection seven years ago. Physically the man shows nothing of note except thickened radials. The disease proper was afebrile. The hemorrhage was mainly from the nose, although there was slight oozing at times from the gums. Hematemesis occurred on one occasion, but may have been due to the swallowing of blood during the night, from the posterior nares, as the vomiting took place upon waking in the morning. No

macroscopical blood was noted in the urine or stools. The petechial eruption on his legs was first noted five days after the onset of the hemorrhage.

On admission the patient was given by the house staff 10 c. c. of horse-serum subcutaneously in the left inguinal region, and the next day, as the patient's condition was worse, I asked the intern to repeat the injection of horse-serum. The serum (Mulford's) was prepared ready for use, in a syringe with a needle of moderately large bore. Later the intern remembered that there had been considerable oozing from the needle punctures, but they were sealed up with collodion and nothing more was thought of it. Naturally what happened was that the blood unable to escape externally from the two sealed up puncture wounds continued to escape into the abdominal tissues. Unfortunately, to make matters worse, infection of the extravasated blood took place and enormous abscesses of the abdominal wall developed. Finally a pyemic condition resulted with abscess formation on one leg and arm and suppuration from both ears.

It is unfortunate that the blood was not examined early, as an estimation of the bleeding time might have put us on our guard as to what to expect from a needle puncture. The blood was first examined ten days after the onset of the hemorrhage and revealed, besides the signs of a secondary anemia, a marked absence of eosinophiles in the stained slides. The blood platelets appeared fewer in number and smaller than normal. Two weeks later the eosinophiles were 1% and the blood platelets large and in clumps.

Finally, the facts that have been forcibly brought home to me by this experience are that in all hemorrhagic conditions (1) hypodermic medication should be watched carefully by the physician in charge, or if administered by an assistant, he should be warned of the possible danger of subcutaneous hemorrhage; (2) as small a needle as practical should be employed; (3) pressure should be applied over the puncture wounds and other suitable measures adopted if necessary; (4) examination of the blood and bleeding time should be made as early as possible.

DISCUSSION OF DR. LYON'S PAPER.

Dr. I. L. Lemann: The case of Dr. Lyons is one of interest and importance. Purpura hemorrhagica is a condition of which very little is known. Some twenty years ago Osler reported a series of cases showing purpura hemorrhagica, peliosis rheumatica, angineurotic edema, and Schœnlein's purpura. He was accused of confusing these conditions. Some years ago I reported to this Society a case similar to Osler's which showed at one and the same time symptoms of purpura hemorrhagica, Schœnlein's purpura, peliosis rheumatica and angineurotic edema. The patient had hemorrhages from vagina, urethra and rectum.

Dr. L. J. Genella: In the use of all serums, enough must be used; 50 c. c. to 100 c. c. should be used. When a quantity less than 15 c. c. is used one should not be surprised at obtaining an action that is nil.

Dr. Lyons (in closing): I purposely evaded going into the cause of the purpuras, as so little is known in regard to them. Generally speaking, they have been divided into two large groups—the essential or idiopathic types and the secondary or symptomatic types (e. g., meningitis, typhus, etc.). This case falls under the heading of the idiopathic type, simply because no cause could be found to account for the condition. In Schœnlein's Disease, the origin is supposedly rheumatic. Duke believes that purpura hemorrhagica is probably a symptom and not a disease and is caused by any agent which will sufficiently reduce the blood-platelet count.

SUBACUTE AND CHRONIC OSTEOMYELITIS.*

By JOHN F. OECHSNER, M. D., New Orleans.

In a previous paper, on acute suppurative osteomyelitis, we traced the course of the infection along the medullary canal, and soon thereafter through the cortical bone by means of the Haversian canals. Subsequently there is a diffusion of the pus beneath the periosteum, separating this from the underlying bone to a greater or lesser extent. From resultant edema, and the spontaneous rupture of the periosteum, there is contamination of the neighboring soft tissues. The further gross pathologic changes are not sufficiently clear cut to enable us to say exactly what will be the resultant damage; that is, we cannot say just how much bone will become permanently involved in the necrotic process, how long the active suppuration will continue, how much and to

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what extent the soft tissues, including the joint ligaments, and even the neighboring joints themselves, may show in the destructive process. While directing our scientific attention to the changes which the bone is undergoing, which changes are of a rather definite character, we must remember that we are dealing with a virulent infection, carrying with it a profound toxemia, and consequently a diminished resistance on the part of the patient, and a corresponding inability on the part of his tissues to resist the destructive process. It has been our experience that these cases look sick, quite sick, and present a picture of profound septic intoxication. These observations lead to the practical importance of the establishment of free drainage, if necessary by multiple incisions. It is interesting to note the rapid change for the better in the appearance of the patient when this has been done.

Aside from a consideration of those profound cases of infection resulting in the death of the patient, and cases of multiple infection, the progress of a localized osteomyelitis will vary, so that the extent of subsequent necrosis will range anywhere from a small limited zone, containing a lake of pus, up to the greater or lesser involvement of the bone, from one epiphyseal line to the other. This is dependent upon a number of factors, the peculiar anatomic construction of the individual bone affected, the intensity and virulence of the infecting micro-organism, the patient's power of general resistance, the establishment fo a successful zone of defense, and so on. Unless free drainage is established, the average non-resistant case will go on to the development of multiple sinuses, the diffusion of pus throughout the surrounding soft tissues with their consequent matting together with plastic exudate, and the general appearance of the limb of the patient when brought to the operating table is such as not infrequently to suggest the remark, "were it not better to amputate." At least one of our cases which we show to-night, that of an osteomyelitis of the humerus, was of this type. Fortunately, in the large majority of cases, the epiphyses escape. Bone, in its process of regeneration, behaves so beautifully as to command our admiration, and conditions which in other parts of the body might yield to nothing short of radical extirpation, here find a field in greater conservatism.

The pathology of osteomyelitis and the process of repair have

been so exhaustively and admirably treated by Nicholls of Boston, that the reader is referred to his article, which appeared in the Transactions of the Section on Surgery and Anatomy of the American Medical Association, 1903. It will be well to dwell briefly, however, on certain definite changes which the bone does undergo, and which will enable us to more intelligently understand the principles underlying treatment. An examination of the lantern slides exhibited to-night will show that as soon as the X-ray is of value to us, a change occurs both in the marrow and just under the periosteum. In the former situation, the darker spots show the necrotic areas, and possibly some new bone from the neighborhood of the endosteum—later the sequestra are seen. In the neighborhood of the periosteum, new bone plaques, when the irritated periosteum has been excited to renewed activity. Whatever may be the respective merits of periosteum, or bone itself, in bone reproduction, it is highly probable, and so it seems to the critical clinical observer, that osteogenesis is dependent upon two factors, one mechanical, the other physiologic. The mechanical factor is represented by the narrow bone spicule left in a radical operation, or the periosteal column in the Nicholls operation, or the aseptic blood clot as originally suggested by Schede. Along these there travel the newly formed blood vessels as a vine along a trellis. The physiologic element consists of the osteoblasts, which very probably are located between the periosteum and the external surface of the cortex and between the endosteum and the inner surface of the cortical bone. It is also likely that new osteoblasts are generated and thrown in this new vascular area. Again it is highly probable, that in the successful experiments conducted by the champions of both theories, osteoblasts were contained in their experimental material. The symptomatology of subacute and chronic osteomyelitis is almost axiomatic. The history of acute invasion, the enlarged bone, the discharging sinuses, and the typical X-ray picture tell the tale.

With the differential diagnosis, it is not the purpose of this paper to deal just at present. Suffice it to say that its importance is not as great as in the acute form of the disease, when early operation is imperative. Moderate delay does not matter, and on the other hand, operation would be indicated in the majority of cases with which this condition might become confused.

TREATMENT.

It is more particularly in the line of treatment, that we wish to make a plea for the more radical and extensive removal of dead bone. Heretofore, repeated operations on the same case have been the rule rather than the exception; this has been in a great measure due to a failure to remove sufficient of the dead bone and to thoroughly open up all pockets where pus has accumulated, and which prevent ready healing. In appropriate cases, the operation of complete excision of the shaft of bone and the creation of a periosteal column, as advised by Nicholls, is the operation of choice. Nicholls advises that this be done about eight weeks after the acute invasion, or at a time when osteophytes are thrown out. Later on in the chronic cases, especially when a certain amount of periosteum has been lost, the operation is not applicable; in two of my cases, where this was attempted, the bone failed to regenerate, and the patients were subsequently submitted to successful bone grafting operations. Nor is the operation of complete excision of the bone always successful in the early cases. When there is a free and copious discharge of pus, the probabilities are that despite rapid bone regeneration, this continued infection would militate against a good result; it is practically impossible to render such a cavity aseptic at the time of operation. The operation is particularly applicable in those cases which we might call dry when there is practically no pus. Again is it more feasible in that part of an extremity where there are two bones, as in the leg and forearm, where the remaining healthy bone acts as a splint? We have never attempted the operation in the case of a single bone, humerus or femur, as its failure here might terminate disastrously.

Success in the chronic cases is dependent upon a sufficiently radical and extensive removal of the dead bone. Multiple operations on the same case are unnecessarily frequent, and are very often dependent upon an imperfect primary operation. A sufficiently long incision should be made through the soft tissues, with a due regard for the protection of important structures, all diseased bone and sequestra thoroughly removed, a narrow scaffold of bone left for the development of blood vessels, and the implantation of osteoblasts, and the ends of the bone and wound so

shelved as to permit of a uniform deposit of granulations from the bottom. On the other hand, however, in a localized necrosis, it would be bad surgery to remove too much bone, particularly if this were healthy. Of course it is frequently difficult to determine with the naked eye what part of the bone is diseased, or how much, and what part is new. The error is probably safer in the way of the removal of too much bone, than too little, inasmuch as bone has such powerful regenerative functions that the gap would soon be filled.

With the use of foreign material, such as the Morhof-Mosetig plug and Beck's paste, our experience has been limited. They are not used as extensively to-day as they were formerly. In the majority of cases, the regenerative process of the bone itself, now that the impediment to the process of repair has been removed, is sufficient for rapid healing. In fact, in some of our cases the bone seemed almost to grow too rapidly. Iodoform plugs and bismuth should probably find their greatest usefulness in those occasional persistent sinuses due to impeding jelly-like granulations, or limited surfaces where repair is unlikely.

Of a fairly large series of cases, we have selected three, as they represent different bones involved in the septic process, and w are also able to exhibit these patients to-night. They are characteristic of the general class of the osteomyelitis cases which we encounter. We are also able in our lantern slide demonstration to show the regeneration of bone that has taken place, and we wish to compare them with the diseased bones before operation. Unfortunately the Hospital has sustained an irreparable loss in the destruction of its X-ray plates of a number of years, so that we will be unable to show the original pictures before operation and have taken the liberty of selecting three cases which are practically similar to what these were before operation.

Case No. 1. Theresa Noreh, 13 years old, was admitted to the hospital November 27, 1913. On August 31, 1914, she complained of pain in her right arm. Her mother thought she had hurt herself moving furniture, and therefore paid no attention to the child's complaint. About three days later she was taken with high fever and her arm became red, swollen, and very painful. The mother took the child to the hospital, where she was admitted directly to a medical ward September 4. Upon looking up the history file from this ward, a positive Widal was obtained on September 5 and positive malaria on September 9. The child was treated for typhoid and malarial fevers; temperature ranged between 99 and 104 degrees.

Physical examination: Poorly nourished, heart and lungs negative, spleen palpable, child looks sick, septic, the right arm shows a decided enlargement of the humerus from one end to the other and is riddled with sinuses, discharging pus. Operation November 29, 1913; ether anesthesia. A somewhat curved incision was made from the upper to the lower ends of the humerus. All of the soft tissues were matted down and indurated. The humerus was found disintegrated from one end to the other. The entire bone was removed from the upper to the lower epiphyses with the exception of a narrow scaffold posteriorly, the wound packed with gauze and treated as an open wound. An examination of blood during her stay in the hospital at this time shows negative for both Widal and plasmodia. She was discharged on December 30, 1913.

Case No. 2. Henrietta Rafferty, 8 years old, admitted to the hospital August 5, 1912; discharged October 30, 1912; diagnosis, chronic osteomyelitis left tibia. Previous history wanting. Admitted to the hospital from the amphitheater where an incision in the leg had been made and drainage established. Subsequent X-ray examination showed extensive disease of the lower half of tibia. Operation, October 3, 1912; ether anesthesia; free incision on anterior surface of the leg extending from junction of upper and middle third to near the ankle joint. Large amount of necrotic bone and sequestra removed from anterior aspect. Wound packed and drained as usual. Patient discharged from the hospital October 30, 1912, and subsequently dressed at the clinic.

Case No. 3. Esther Frey, 13 years old, was admitted to the hospital March 10, 1908. Present illness: About two months ago patient went to bed one night with fever. After lying down about one hour began to get pain in left lower thigh. Next morning pain had increased and fever had gone up some. On third day fever and pain were about the same. About a week later could notice swelling in leg, and about this time patient began flexing the leg, and since then has been unable to straighten it. Ten days after the illness began patient developed a profuse diarrhea. A physician was called, and he said patient had typhoid fever. Fever and pain disappeared about two weeks previous to admission to hospital. Physical examination shows an emaciated and poorly nourished child; a hard mass surrounds the lower one-third of femur.

Operation March 14, shows the femur necrosed for one-half its lower extent. Bone was freely chiseled throughout practically its whole diameter, with the exception of a narrow segment posteriorly. Wound was packed and drained in the usual way. Patient left the hospital on May 11, 1908. Blood examination during her stay in the hospital shows a negative Widal.

The pictures accompanying this article show the diseased bone before operation, and the complete regeneration of the bone at varying periods after operation. Cases got entirely well after practically one operation.

1. Extensive necrosis of humerus. 2. Regeneration of humerus after removal of all but a narrow scaffold of bone. 3. Extensive necrosis of lower end of tibia. 4. Tibia regenerated after extensive sequestrotomy. 6. Regeneration of femur after extensive removal of dead bone.

ILLUSTRATING ARTICLE OF DR. J. F. OECHSNER.

DISCUSSION ON DR. OECHSNER'S PAPER.

Dr. A. Jacoby: Mentioned a case of chronic osteomylitis of eight years duration that was discharged as cured three weeks after operation. The disease was situated in the lower end of the femur and the incision used was made through the rectus femoris muscle. This case and several others will be reported later.

Dr. A. Eustis: I have been very much interested in Dr. Oechsner's paper. Some of you will recall a case which I reported last year in which I removed the entire humerus and six inches of the radius and ulna for a chronic osteomyelitis of seven years' standing. Although there was no periosteum left, there was a re-formation of the bones and a functional elbow joint. This operation was done during my practice in the country, but to date, five years since same, he has had no further trouble and is able to plow, shoot a gun, and perform other such acts. Osteomyelitis is a disease which should especially interest the internist as it so often simulates typhoid fever. However, with a white blood count the differential diagnosis is promptly made, and when once made the case becomes a surgical one. I cannot too strongly urge early operation as failure to open up the medullary cavity soon may terminate fatally from an acute endocarditis or pyemia.

Dr. I. Cohn: I agree with Dr. Oechsner in pointing out the necessity for an early diagnosis. The X-ray does not always demonstrate the condition in the early stages, and in one case recently under treatment the X-ray findings indicated "a periostitis." At the operating table I found a definite osteomyelitis (a pure culture of the staphylococcus was found from the pus in the medulla). Many of the so-called periostitis cases are not true periostitis but a cortical osteitis or the result of osteomyelitis. From recent experiments on the repair of fractures (a full report of which will appear in the June number of **Surgery, Gynecology and Obstetrics**) Cohn and Mann have found changes similar to "periostitis" on the surface of bones from which periosteum had been entirely removed. We have also found the periosteum inactive, even thinner than normal and pushed outward by callus in fractures. Perfect union has resulted in the absence of periosteum.

The thickened periosteum found in these cases is due to the proliferation of osteoblasts which have been pushed outward and have become adherent to the connective tube, known as the periosteum.

Slides were shown to illustrate the discussion.

Dr. Oechsner (in closing): This paper is one of a series on this subject. I think we should consider where there are osteoblasts. Nicholls removes the entire bone leaving only periosteum, but in this periosteum there are of course osteoblasts In chronic cases it is best to remove a large amount of bone.

N. O. Medical and Surgical Journal

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DRINKING WATER ON RAILROAD TRAINS.

With the passing of the common drinking cup on railway trains and in other public places, a considerable step forward was taken in the prevention of certain diseases, known to be disseminated by the use of community drinking utensils.

That all the evils connected with drinking water on trains and at stations have not passed, however, is revealed in a circular emanating from the officials of the Queen and Crescent route, wherein it is declared that it is the purpose of this railway system to reject any drinking water that does not come up to standard, and to provide for the use of the public and

of employees only such water as is suitable for drinking purposes.

This determination has been reached after a careful examination of drinking water supplied in various divisions of this railroad system, and after tests had been made by competent laboratory experts.

This is a desideratum of long standing, and many a sane individual has reluctantly quenched his thirst at the rusting water tank of a day coach, discounting the chances taken in so doing. The Pullman tanks have been equally open to criticism, and it is only a recent practice in some Pullmans to have the water and the ice in separate compartments. It is not unusual, at this time, in those cars not so provided, to see the ice carefully handled by the ice man, using rubber gloves, as carefully brought into the car by the porter, using ice hooks for putting his ice in the tank—and then, when the ice does not go in the tank properly, the porter uses his bare hands to shove down the ice.

Sanitation applicable to railway travel is indeed needed, and it is gratifying to see the initiative in one important phase, directed at a proper water supply, undertaken by the utility itself, without formal procedure directing it.

THE STATE SOCIETY MEMBERSHIP.

Quite a stirring appeal has emanated from the office of the Secretary of the Louisiana State Medical Society in a circular which should arouse the attention of the members generally.

When the reorganization of the State Medical Society was undertaken in 1903, the profession throughout the State grew quite enthusiastic, and local parish societies increased in appreciable numbers. This continued over several years until the State Society had a satisfactory membership and one made up of the majority of physicians of the State.

For a few years past there has been a noticeable indifference, not only in the State Society itself but among much of the local organization. The extraordinary activity of a few of the large parish societies offers some compensation, but this is not enough. The State Society stands for too much to have a mere casual relation to the individual membership.

It is commendable that the present energetic secretary is

trying to create a new spirit in the Society's affairs, and all of the membership should support him in his endeavor.

The JOURNAL is now, as it has been always, interested in furthering the cause of the Society in its importance as related to State medicine. New problems are coming all the time, and a loose organization can accomplish nothing. Every reputable physician in the State should be a member of the State Society, and those now in membership should try to get the desirable outsiders to join. The expense attached to medical affiliation is small compared with the benefits accruing. Moreover, until a man has united himself to his fellows in the same calling he is not fulfilling the real objects of his citizenship. The State Society offers fellowship, scientific advancement, economic relations with the rest of the profession and protection by a proper medical defense against accidents occurring in practice. The closer alignment of interests of those in membership means more for the general good of all, and a united profession openly affords the public better service.

The purposes of the medical profession are changing all the time, and we should be ready in our advisory capacities to assume the proper standing for public health which is, sooner or later, to be our function. Until recently membership in the State Society afforded the individual the published transactions, but evidently the status of the transactions of the current year is uncertain, for the official organ has not issued since its March number, which appeared late in April.* We are familiar with many of the difficulties attending a medical publication, but we believe that the contractual obligations engaged at the time the Society changed its official organ should not be lost sight of by the membership, and the editors of this JOURNAL are exercising the right as members of the Society, in this admonition to fellow members.

With a membership in the State Society comprising all eligibles the list would be large enough to make active many functions not now even contemplated; but more than anything else, the Society could become wholly independent of all privately owned journals in the State and could free itself of much of the usual

*As we go to press (July 24) the April and May issues of the Official Journal have just come to hand.

incubus of politics in which many State societies are so thoroughly steeped.

The advantages in membership are indeed large and should appeal to all gentlemen of the profession in Louisiana, aside from the moral obligation which dictates such affiliation as a part of the creed which the real physician should call his own.

THE NATIONAL BOARD OF MEDICAL EXAMINERS.

At the San Francisco meeting of the A. M. A., President-elect Rodman announced the organization of a National Board of Medical Examiners, to begin operating in the fall of the current year.

Many suggestions have been made, aiming at a standard examination for medical license in the United States, and Dr. Rodman himself for a number of years has earnestly worked at the problem. The result of these efforts would seem to be the solution of the matter.

The proposed National Board is a voluntary board. Its certification should establish the fact that the recipient has satisfied a standard test, conducted on the highest possible lines by a representative body of men, consisting of the Surgeons-General of the Army, of the Navy and of the Public Health Service, (with a second officer in each service additionally appointed). The Board further consists of a representative from the American College of Surgeons, from the association of American Medical Colleges, from the Federation of State Examining Boards, and of several representatives from the American Medical Association. The successful candidates become at once members of the Medical Reserve Corps of the Army or of the Navy, upon further satisfying the required physical examination, thereby establishing the Board's examination as sufficiently standard for government services.

The announcement by the Board has as yet excited little comment, notwithstanding its importance. There may be, and probably will be, considerable adverse comment on the Board—but this is to be expected in a venture of this sort.

The room for adverse comment, however, is not large when the objects of the Board are fully considered.

It is purposed to make of the National Examining Board a standard test for entering the practice of medicine in the United

States and its tributaries. The test is to be so high that the successful candidates before the Board will be so qualified that the certificate of the Board should be acceptable for registration anywhere. It is intended that the National Board shall take the same academic place in the United States that is occupied by the Conjoint Board of Great Britain, granting fellowships in the College of Physicians and the College of Surgeons.

State Boards are chiefly concerned in the operation of the National Board, but as the number of candidates from year to year appearing before the National Board will represent only a small proportion of the total graduates in medicine the State boards can have only a secondary interest. This interest must grow active only when licentiates of the National Board appear for registration in the several states. The basis of such registration cannot be much questioned and the State Boards, already represented by a regular member on the National Board, should welcome desirable men, qualified by a high standard in the states in which they may elect to settle. In other words, there is no likelihood that the National Examining Board will ever supplant State Boards, for the reason that for some time to come the National Board will conduct its examinations in Washington, D. C.; it will make the cost in time, travel and outlay of such material importance as to determine the test among those only who are willing to spend the time and outlay and to accept the conditions involved. The National Board has no thought of making its certificate cheap in any sense of the word.

The approval of the U. S. government services, as evidenced by the acceptance of the officials above noted, and by the approval of the Secretary of each service and the proffer of the laboratories and equipment of the Army and Navy medical schools, etc., in the conduct of practical and other examinations, will satisfy those who have argued for a Federal Board. The Board as proposed has the sympathy, co-operation and endorsement of the government, without the control, which might be objectionable.

The National Board of Medical Examiners, as proposed, may not entirely satisfy all the needs of the standard for medical licensure, but it is certainly an excellent beginning, and Dr. Rodman deserves credit and approbation for his part in furthering so excellent a cause.

THE HARRISON NARCOTIC LAW.

The Harrison law has now been in force sufficiently long to enable us to study some of its effects and defects.

Like many of our laws, even national, it seems to have been passed without sufficient intelligent preparation, or a forecast of sufficient scope as to its early results. In consequence, it will probably have to be amended and re-amended before it can work with satisfactory smoothness. Already various decisions as to the interpretation of some of its clauses have led to changes in the rules made for the enforcement of the law. So much so that recently, in this city, prescription clerks were going around having physicians put in proper shape recipes containing novocain, which at first was not supposed to be included in the workings of the law.

As usual, there is discrimination against the physician and in favor of nostrums. A new ruling makes it necessary for the physician to keep a record of each administration of a drug included in the law when given to a patient *at his office,* although the law excepts doses administered when *in actual attendance* upon the patient. This new ruling would make it appear that the doctor is not in actual attendance upon the patient when he treats him at his office, which not only is nonsense, but could easily be circumvented by the dishonest practitioner who could take the patient to another room, a hotel, etc., if his use of the drug was not legitimate. On the other hand, preparations can be sold over the counter if they contain less than a certain proportion of a habit-forming drug, and a prescription may be refilled if it contains less than that percentage, both of which things are pernicious and could, in time, nullify to a great extent the provisions of the law. Some of the worst cases of drug habit have had their origin in the use of cough medicines containing small doses of heroin, and of tonics with small doses of coca or cocaine. The amount of the drug should not cut any figure in the matter, as there is no provision made or possible to regulate the quantity of the preparation anyone may consume.

An encouraging sign of the favorable effect of the law is the report by some drug jobbers that sales of narcotics have fallen off about one-third since the law has been in force. This is all the more noteworthy because of the increased demand

for export, owing to the war in Europe, which must first be offset before a decrease can be noted. Taking this into account and making allowance for the continued legitimate use of the drugs, it would seem conservative to estimate that the enforcement of the Harrison law has already resulted in a reduction by one-half of the illegitimate use of habit-forming drugs.

A further illustration of the ultimate good effect of the law is furnished by the serious problem presented by one of its immediate results. The army of habitues who can no longer get their accustomed dope and yet have no means to obtain treatment for their habit, constitutes a difficulty, and a very serious one in this and other communities without unlimited means for such purposes. Evidently this phase of the question was not thought of or then was ignored by the framers of the law. Some provision should have been made for these unfortunates who, *at this moment,* are not responsible for their condition and should not be treated merely as criminals, and especially not inhumanly as such.

A great deal more could be written in the same strain, not for the purpose of criticising or of finding flaws, but to call attention to the necessity for the further study and amelioration of the law. Lack of space forbids. The above, we hope, will suffice to show that the earnest and honest physicians must actively co-operate with government officials in the intelligent study and enforcement of the law; also that the government must exercise good judgment and fairness in its interpretation of the new legislation.

Medical News Items

A CONFERENCE OF HEALTH OFFICERS

was held on July 15-16, 1915, at the New Orleans Court Building, New Orleans, called by the Louisiana State Board of Health.

The following topics pertinent to health conditions were selected for discussion: Malaria; Plague Prevention; Regulations; Rural Sanitation; Sanitary Inspections; Social Hygiene; Pellagra; Anthrax; School Inspection.

The attendance was good and included some visiting sani-

tarians of national repute. Interest was maintained throughout and the discussions should bring valuable results.

Congress Postponed.—The meeting of the Seventh International Congress of Obstetrics and Gynecology, which was scheduled for September of this year, has been postponed until September, 1917.

The American Society of Tropical Medicine elected the following officers at its annual meeting in San Francisco on June 15, 1915: President, Dr. Milton J. Rosenau, Boston; first vice-president, Dr. Bailey K. Ashford, San Juan; second vice-president, Dr. C. C. Bass, New Orleans; secretary, Dr. John M. Swan, Rochester, New York. Dr. Isadore Dyer, of New Orleans, was elected one of the councillors for the next two years.

The Mississippi Valley Conference on Tuberculosis will be held in Indianapolis, September 29 to October 1 inclusive.

Physicians' Study Travels.—A tour has been announced by the American Society for Physicians' Study Travels, starting about September 11 from Philadelphia. Interesting demonstrations and lectures will be given at Johns Hopkins Hospital, Virginia Hot Springs, White Sulphur Springs, and Hotel Chamberlain, Old Point Comfort. For further information communicate with Dr. Albert Bernheim, 1225 Spruce Street, Philadelphia.

Meeting of Attakapas Clinical Society.—The regular annual meeting of the Attakapas Clinical Society was held in New Iberia, La., June 23, 1915. A clinic was held in the Shaw Sanitarium preceding the regular meeting, and a scientific program was afterwards carried out in the parlors of the Hotel Frederic. Dr. W. W. Lessley, of Carencro, La., presided. The report of the secretary, Dr. Clark, of Lafayette, showed an increase in membership during the past year of nearly 100 per cent. The election of officers resulted as follows: President, L. O. Clark, Lafayette; vice-president, J. P. Harrison, Segura; secretary-treasurer, W. F. Carstens, New Iberia. Lafayette was selected as the next meeting place.

Louisiana Legislature's Resolutions for Pure Food and Drugs.—Under Act 36, the Louisiana Legislature recently adopted resolutions of endorsement for the work of the presi-

dent of the State Board of Health for pure food and drugs. The resolutions are given in full:

"*Whereas*, Dr. Oscar Dowling, president of the Louisiana State Board of Health, ex-officio commissioner of food and drugs, in his administration of these departments has demonstrated the highest regard for his oath of office and courage in the cause of public health against mercenary interests, which have attacked the work of the Louisiana State Board of Health and discredited its efforts to protect the public; therefore, be it

"*Resolved* by the Senate of the State of Louisiana, the House concurring, that we approve the campaign of the Louisiana State Board of Health as conducted by Dr. Oscar Dowling, president, to rid the State of Louisiana of the pernicious patent nostrums so widely advertised and sold under misleading and fraudulent pretenses as to curative properties.

"*Resolved further*, That we commend the action of the Louisiana Press Association for its indorsement of the Louisiana State Board of Health in its effort to control the patent medicine evil, and Dr. Oscar Dowling, president, for his defense of the medical profession, the American Medical Association and the Louisiana State Board of Health at the twenty-sixth annual session of the Louisiana Press Association in Monroe June 10, 1915, against the attack made by one of the speakers from a neighboring state who appeared on the program.

A Journal Reorganizes.—The *Hospital News* Publishing Company announces that its journal, *Hospital News*, has been completely reorganized, with the addition of a large editorial staff. The object of this journal is to chronicle hospital activities in all their manifold phases, and incidentally to create on the part of the general public a sympathetic interest in hospital work. It is the hope of those interested in the journal that eventually it may become a force in combating quackery and charlatanism, and overcome the prejudice which still exists in many quarters with regard to hospitals and physicians. In addition to the medical articles, *Hospital News* will carry short stories, personal paragraphs, hospital happenings and other matters of interest to nurses, hospital managers and physicians. There will also be a place in the journal devoted to classified information in regard to interne positions in the different hospitals in the United States available to medical students and recent graduates, and similar data in regard to nurses' training schools and their requirements for entrance.

The Southern Medical Journal Announces that after

July 1 its editorial and business offices will be in Birmingham, Alabama, Suite 516 Empire Building, instead of in Mobile, Alabama, as formerly. The change is made for geographical reasons, Birmingham being the center of the territory of the Southern Medical Association, and a city with excellent railroad facilities, and therefore a much better location for the conduct of its business.

No Unusual Profit in Drug Plants.—According to the U. S. Department of Agriculture, which has recently issued a bulletin on the subject, the growing of drug plants offers no unusual opportunities for profit to the American farmer who undertakes it as a minor source of income. The government specialists believe that many drug plants require a special knowledge of cultivation and handling; that the demand for a number of them is so limited that there is danger of overproduction; and that those who undertake this line of work should devote themselves to it entirely and be familiar with market conditions to prevent a loss of time and money.

Appropriation for Nebraska Hospital.—The Nebraska State Legislature has recently appropriated $50,000 for the erection of a hospital on the campus of the University College of Medicine. This hospital is to be a teaching hospital for the University of Nebraska, under the control of the board of regents, and is to receive indigent patients from the entire state.

Relief Fund for the Belgian Profession.—The report of the treasurer, Dr. F. F. Simpson, of the committee of the American physicians for the aid of the Belgian profession, shows, for the week ending July 12, 1915, a total disbursement of $7,310.04.

Boric Acid as a Food Preservative Prohibited.—The United States Supreme Court recently upheld the constitutionality of the Illinois Pure Food Law which prohibits the sale of a food preservative containing boric acid. It was stated in the decision that the validity of the law must be upheld unless it could be shown beyond doubt that boric acid as a food preservative was not unwholesome. The court held that this had not been done.

San Francisco Has Public Health Sermons.—One of the interesting features which marked the meeting of the American

Medical Association meeting in San Francisco was the addresses delivered on various aspects of public health in fourteen of the churches of that city by members of the association.

Rush Medical College Raises Requirement.—Rush Medical College, which is the medical department of the University of Chicago, announces that students entering the medical courses will hereafter be required to take a fifth year, heretofore optional, for graduation. The work of this fifth year will consist of an internship in a hospital approved by the faculty, or advanced work as a fellow or research student in one of the departments of the college, with the presentation of a thesis embodying original work.

Examination of Florida School Children.—The Florida Legislature has recently passed an act which provides for the thorough examination of all school children of the state, including the rural schools, under the direction of the State Board of Health. This bill also provides for a sanitary survey of all school buildings and their surroundings. The bill was drawn up by Hon. Oliver J. Miller, introduced in the House by Hon. Forest Lake, and handled in the Senate by Hon. Arthur E. Donegan. Its passage is due in a large measure to their efforts. Dr. Miller wrote over three thousand letters throughout the state, besides having personal interviews with prominent educators, in the hope of furthering this cause.

Warning Against Typhoid.—A warning to vaccinate against typhoid fever during the summer months has been issued by the United States Public Health Service to the 400,000 government employees in the United States. The bulletin states that seventy-five government employees die each year from the disease. The Secretary of the Treasury has established 164 stations where antityphoid inoculation may be obtained without expense.

Judges Appointed.—Through the American Social Hygiene Association several months ago a prize of $1,000 was offered by the Metropolitan Life Insurance Company for the best original pamphlet on social hygiene for adolescents between the ages of twelve and sixteen years. This was done in an effort to popularize the social hygiene problem. The following have been selected as judges in the contest: Mrs. Martha P. Falconer; Lee K. Frankel, Ph. D.; Dr. Luther H. Gulick, New

York; Miss Julia C. Lathrop, Dr. Milton J. Rosenau, Boston; Dr. Victor C. Vaughan, Ann Arbor, Mich.; and Mrs. Ella Flagg Young, Chicago.

Leprosy in Tennessee.—The first case of leprosy said to have ever been found in Tennessee was recently reported by the State Board of Health in the person of a seventeen-year-old boy.

Consumptives Advised to Stay at Home.—A bulletin has been issued by the National Association for the Study and Prevention of Tuberculosis, advising only those consumptives who have at least $1,000 to spend to attempt to make a new home in the West. The bulletin further states that tuberculosis can be cured anywhere; that it is far better for a person of moderate means, such as the average working-man, to go to a sanatorium near home, than to go West and live in perhaps a more favorable climate, but without proper food or medical care; that although there may be plenty to do in the West and Southwest for ablebodied men, the consumptive will find it difficult to get work and should not go there in the hope of getting a job.

Pellagra Increasing.—According to report, 1,299 cases of pellagra were reported to the Mississippi State Health Board in April. The state charity hospital was petitioned by the colored physicians and colored citizens, asking that the institution be opened for the treatment of pellagra patients. It is said that the hospital is already full of emergency cases, but the need of a separate institution for this rapidly increasing disease is emphasized in the petition.

Borden-Keen Fellowship.—Professor W. W. Keen has established the Corinna Borden Keen Research Fellowship in the Jefferson Medical College, the income from which now amounts to $1,000. The gift provides that the recipient of the Fellowship shall spend at least one year in Europe, America or elsewhere (wherever he can obtain the best facilities for research in the line of work he shall select, after consultation with the Faculty), and that he shall publish at least one paper embodying the results of his work as the "Corinna Borden Keen Research Fellow of the Jefferson Medical College." Applications stating the line of investigation which the candidate desires to follow shall be forwarded to Dr. Ross V. Patterson, Sub-Dean, Jefferson Medical College, Philadelphia, Pa.

Personals.—Dr. Richard H. Creel, of the U. S. Public Health Service, has been appointed chief health officer of Boston as sole head of that department.

Dr. William J. MacNeal has been appointed director of the laboratories of the New York Postgraduate School and Hospital to succeed Dr. Jonathan Wright, who resigned.

Dr. Paul Reiss is spending the week-ends at his home in Pass Christian, Miss.

Dr. C. Jeff. Miller will leave in August to spend a while in Rochester, Minn., visiting the Mayo Clinics.

Dr. W. A. Pennington, of Elton, La., is a candidate as a delegate to the coming Louisiana Constitutional Convention.

Dr. and Mrs. T. J. Dimitry and family, of New Orleans, have returned after a trip in the East.

Dr. W. J. Maloney, formerly a professor in Fordham University, who has been serving as a surgeon with the Dardanelles expeditionary force, is in a hospital in Alexandria, Egypt, suffering from paralysis of the right leg and a gunshot wound in the right wrist. He expects to return to America.

Surgeon-General William C. Gorgas, of the U. S. Army, recently received the honorary degree of Doctor of Laws from Georgetown University, in recognition of his work in the Panama Canal Zone.

Surgeon John D. Long, U. S. P. H. S., has been made director of Health of the Philippine Islands, a position created under the new Philippine health law, which became operative July 1.

Removals.—Dr. W. R. Clement, from 109 W. Park Avenue, Oklahoma City, to Jennings, Oklahoma.

Dr. Maud Loeber, from 1729 Marengo Street, to 2315 Carondelet Street, New Orleans.

Dr. Cosby Swanson, from Empire Life Building, to Suite 929 Candler Building, Birmingham, Ala.

Married.—On June 23, 1915, Dr. Edward Lacy King, to Miss Edith Chalin Follett, both of New Orleans.

Dr. Ruffin Trousdale Perkins to Miss Catharine Caroline Churchill, both of New Orleans, on May 27, 1915.

Died.—On June 29, 1915, Dr. Robert E. Swigart, superintendent of Medical Department of the United Fruit Company, aged 40 years.

Book Reviews and Notices

A Treatise on Clinical Medicine, by William Hanna Thomson, M. D., LL. D. W. B. Saunders Company, Philadelphia and London, 1914.

The original feature of this work, strictly clinical, is the stress laid on: First, "catching cold," as the most common cause of disease and death in cold climates, under the head of pathology of chill affecting localized areas of skin.

Second, the significance of certain common but important symptoms, or accompanying conditions which chiefly determine the nature of the prognosis and the leading indications for treatment.

Third, remedies which are classified according to their special applications; fourth, infection by living micro-organisms as the greatest cause of disease and death, everywhere, with an attempt at a classification. The last section deals with diseases of particular organs and tissues, and shows no characteristic except concession, for the author's aim is throughout the work to assist the practitioner engaged in the performance of his duties.

DUPAQUIER.

Fever. Its Thermotaxis and Metabolism, by Isaac Ott, A. M., M. D. Paul B. Hoeber. New York, 1914.

These three lectures were delivered before the sophomore class of the Medico-Chirurgical College. They have been thought worthy of publication, as the subject is one of maximum importance in the practice of medicine. The studies upon this subject have occupied the author for forty-five years, as a practitioner of medicine and physiologist. A learned review on the subject with the many questions referring to it yet unsolved. DUPAQUIER.

A Handbook of Fevers, by J. Campbell McClure, M. D. Paul B. Hoeber, New York. 1914.

This book pretends to be no more than a handbook for the use of students and general practitioners, and the author has endeavored as far as possible to confine his attention to the more practical aspects of the diseases under consideration, devoting more space to treatment than many will perhaps approve of. Detailed descriptions of the pathological anatomy of the various diseases have been purposely avoided and, only such points in epidemiology and bacteriology have been dwelt upon as seem to be absolutely necessary. Only those tropical diseases have been included in this small volume as may possibly be met with in Great Britain in the ordinary course of practice.

The book is written mainly from the viewpoint of practical public

health as proven by the insertion of Beriberi and Pellagra under the head of fevers, which the author admits is not strictly correct. But they are welcome when the real object of the work is considered.

DUPAQUIER.

Modern Medicine, by Sir William Osler, M. D., and Thomas McCrae, M. D. Vol. IV, second edition. Lea and Febiger, Philadelphia and New York. 1915.

Part first, which deals with diseases of the circulatory system, and part second with diseases of the blood, take much over more than half the volume. They form the capital parts. The introduction of part first by Ch. F. Hoover, M. D., general considerations in cardiovascular disease, and that of part second by Richard C. Cabot, M. D., general pathology of blood-forming organs, have engaged our attention very closely, with profit and pleasure.

The other parts have reference to diseases which are not so commonly connected with practice, but from the viewpoint of information they are equal to the standard of this excellent text-book.

DUPAQUIER.

Diseases of he Bronchi, Lungs and Pleura. By Frederick T. Lord, M. D. Lea & Febiger, Philadelphia and New York. 1915.

We certainly were in need of a special "practical treatise" on the diseases of the respiratory organs, and this book amply fills it. As stated by the author, the aim has been to present current knowledge, founded on the literature and the experience gained in the wards and pathologic laboratory of the Massachusetts General Hospital, in such form as to be of value to students and practitioners and also to provide a basis for further research. Pulmonary tuberculosis is not considered under a separate heading, but special attention is given to conditions which simulate pulmonary tuberculosis and their differential diagnosis. The book is illustrated with ninety-three engravings and three colored plates. References are plentiful.

DUPAQUIER.

Acute General Miliary Tuberculosis, by Professor Dr. G. Cornet, of Berlin and Reichenhall. Translated by F. S. Tinker, B. A., M. B., etc., of Liverpool. Paul B. Hoeber, New York.

A translation in English text of lectures to a class at college is what we call this monograph, with an abundant catalog of references. But, the lectures are not any more valuable than others given in other universities in other lands. They are certainly not superior to the classical teaching in French universities where the orginal and expressve term "Granulic" was coined many years ago, by a master professor, too. DUPAQUIER.

International Clinics. Volumes III and IV, twenty-fourth series, 1914, and volume I, twenty-fifth series, 1915. J. B. Lippincott Company, Philadelphia and London.

We can safely state that, at no time since we became acquainted with this excellent publication, did we ever find a single article that was not most profitable to the practitioner.

Many times the articles, chiefly of recent series, bore the mark of superiority and of great originality.

The publication is growing in value, certainly. It ought to become extremely popular and this we heartily wish.

DUPAQUIER.

Reference Handbook of the Medical Sciences. Vol. IV, third edition, 1914. William Wood and Company, New York.

It is with great pleasure that we call attention to this beautiful work and recall that the Reference Handbook of Medical Sciences embraces the entire range of scientific and practical medicine and allied science. The contributors are all eminent writers. This third edition by Thomas Lathrop Stedman, A. M., M. D., has been completely revised and rewritten from the first and second editions, the same original plan being followed.

The whole work will be complete in eight volumes.

Volume four is illustrated by numerous chromolithographs and nine hundred and seventy-seven half-tones and wood-engravings. The mechanical production of the book does credit to the publishers.

DUPAQUIER.

Reference Handbook of the Medical Sciences. Third edition, edited by Thomas Lathrop Stedman, A. M., M. D. Volume Five. William Wood and Company, New York. 1915.

We are pleased to notice the appearance of another volume of this standard work, embracing that division included between the letters H. (**HEA.**) and L. (**LIF.**)

Throughout there is evidence of wholesale revision of the text, many new contributors are in evidence and the illustrations (numbering over 700) are strikingly good.

The established position of this standard cyclopedia on medical topics has been all the more emphasized in the new edition of which this present volume is representative.

DYER.

Lectures on the Heart. Comprising the Herter Lectures (Baltimore). A Harvey Lecture (New York) and address to the Faculty of Medicine at McGill University (Montreal) by Thomas Lewis, M. D., F. R. C. P., D. Sc. Paul Hoeber, New York. 1915.

The science of electrocardiography has completely overturned former notions of cardiac physiology, normal and morbid, and every

one who would be abreast of the times must inform himself of the basis of this new work. Dr. Lewis in the first three lectures of his new volume outlines the manner of making observations by means of the electrocardiograph and sketches some of the valuable facts already ascertained and suggests broadly the field in which the demonstration of new facts may be expected. Although the electrocardiograph is adapted only to hospital work both because of its expense and of its lack of portability, still the practitioner must not waive its use aside as something beyond his ken. It is only by correlating the bedside phenomena as observed by palpating finger and ausculating ear with the scientific interpretation of these phenomena as made out by such instruments of precision as the electrocardiograph that we shall be able to make progress in diagnosis, prognosis and treatment. Every practitioner may not use an electrocardiograph but every practitioner should understand why and how the contraction waves of the heart muscle set up electrical currents which cause in a galvanometer oscillations which can be graphically registered; further that normal heart muscles give rise to standard curves as thus recorded and that departures from the standard curve can be definitely traced to morbid anatomy and physiology in a particular site. All such departures from the normal are not equally important from a prognostic standpoint and each has its own therapeutic indications.

Dr. Lewis has very simply and interestingly explained how the electrocardiograph has made these things possible. His fourth lecture is devoted to the consideration of dyspnea. Dyspnea, he states, is not to be explained even in heart cases entirely by the embarrassment of the circulation in the lungs. "Dyspnea which comes from mechanical causes, be they primarily of circulatory, pulmonary or bronchial origin, proclaims itself clinically by its attendant cyanosis." There is, Lewis contends, a special symptom complex in which there is no cyanosis, in which the patients exhibit few signs of venous or liver engorgement, and in which pressure upon the abdomen does not materially increase the depth or rate of respiration. "The blood is fully aerated and has low tension of CO_2." In this symptom complex there has been demonstrated a considerable decrease of alkalinity of the blood and it is to this acidosis (non-volatile acids) that the symptoms are to be attributed.

Dr. Lewis' lectures are to be commended as stimulating and instructive both to those who are familiar with this new field of research and to those who feel the need of a b c instruction.

LEMANN.

America's Pressing Mortality Problem. By E. E. Rittenhouse, president Life Extension Institute, prepared and delivered at the Academy of Medicine, February 21, 1915.

The scope of this address is indicated in the subtitles. Numerous charts are given illustrating the fact that in America the death rate above forty is increasing while abroad (in normal times) it is stationary or falling. The fight against infant mortality has resulted in increasing the average length of life. More indivduals reach the adult age but according to the statistics here presented the expectation of life for a man of forty today is less than it was thirty years ago. Very great reductions are shown in the mortality from such diseases as tuberculosis and pneumonia but equally great increases are shown in the death rate from apoplexy, heart, kidney and liver disease. The thesis of the address is that this increased loss especially among males of gainful occupations is due to increased life strain, the strenuous life. "A better term is the intemperate life; that is, intemperate eating, drinking, working and playing." Attention is called to the extraordinary decline in activity in a very large portion of the population due to the introduction of time and labor saving devices—a decline which "reaches from the factory hand or the mechanic who leisurely watches or feeds a machine to the farmer who rides his sulky plow, to the trainmen whose brakes are now set by air." "To walk a few blocks, to stand a few minutes, or to climb a few stairs overtaxes the strength of thousands of healthy looking people—hence the popularity of the chair, the trolley and the elevator." This decline of activity has been accompanied by no decrease in eating; on the contrary we eat more and new and rich foods. This is the warning note sounded by the address—a warning note that must be heeded or the consequences will be disastrous. LEMANN.

Pathological Technique. Including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By F. B. Mallory, M. D., and J. H. Wright, M. D. Sixth edition, revised and enlarged. W. B. Saunders Company, Philadelphia and London, 1915.

The new edition is slightly larger than its predecessor, made necessary by the valuable laboratory knowledge published since 1911 and of facts not thought sufficiently tried out for incorporation earlier.

The volume is divided into three parts: Part I deals with autopsy technique and describes in minute detail the methods of post-mortem examination with descriptions and illustration of necessary instruments; a bibliography on post-mortem technique is an attractive ending to this section.

In Part II, which is made up of bacteriological methods, are con-

sidered all the essentials for the study of pathogenic bacteria and methods of identification. The individual organism is taken up separately and the peculiar characteristics which serve for its identification are brought out in a brief but clear manner. Illustrations of the morphology and cultural appearance of most of the organisms adds to the clearness of the descriptions. Certain of the non-pathogenic varieties frequently encountered in routine laboratory work are described and differentiated from those pathogenic organisms which they resemble in one or more characteristics.

Part III takes up Histological Methods. In a systematic manner the various steps in the technique of preparing tissue and pathological material for microscopic examination are accurately described and only those methods are given which the authors have by personal experiments proven satisfactory. These various steps begin with a description of the necessary equipment and extend in a logical sequence through the applications of special staining methods for the differentiation of the various tissue elements.

The latter pages of this part describe the several methods of applying the complement fixation test in the diagnosis of certain diseases, also the application of Lange's Colloidal Test for Syphilis of Cerebro-Spinal System.

This book is beyond doubt the best work of its kind published in the English language and no laboratory or laboratory worker can afford to be without it for reference and instruction.

JNO. A. LANFORD.

Infection and Immunity. A text-book of Immunology and Serology for Students and Practitioners. By Charles E. Simon. Third edition, revised and enlarged. Lea and Febiger. Philadelphia and New York, 1915.

This edition is further improvement upon the former popular editions. Dr. Simon has brought the book right up to date. Though former editions were intended to serve as a guide to further reading on the subject of Infection and Immunity, the present edition contains sufficient technical details that, as the author suggests, it might serve as a basis for a course of systematic instruction in Immunology in medical schools.

The chapter upon the Wassermann test for syphilis has been practically rewritten and such newer things as the Abderhalden test, the Schick test to determine immunity against diphtheria, the Ashurst and John method of treating tetanus, etc., have been included.

We take great pleasure in recommending the book to both students and practitioners who desire to be informed upon the important subject treated.

C. C. BASS.

Collected Studies from the Bureau of Laboratories, Department of Health, City of New York, Vol. VII, 1912-13. Wm. H. Park, Director.

This is a most valuable collection of the research work done by the staff of the New York Health Department. Many important original researches have been made, the results of some of which add materially to knowledge of the subjects studied. The articles are classified according to subjects as follows: applied therapy and preventive medicine; bacteriology; bio-chemistry; clinical cases with laboratory studies; food and drug chemistry; immunity; milk; clinical pathology; special pathology; physiology; protozoology. The volume consists of 463 pages and would be very valuable to anyone engaged in laboratory research as well as to others. We congratulate Dr. Park upon the work his department is doing.

BASS.

Progressive Medicine. A Quarterly Digest of Advances, etc., in the Medical and Surgical Services. Edited by Hobart Amory Hare, M. D., assisted by Leighton F. Appleman, M. D. Vol. xvii, No. 1. Lea and Febiger, Philadelphia and New York.

This number of Progressive Medicine is indeed a collection of a variety of material covering the ear, nose and throat, diseases of children, infectious diseases, and the surgery of the head, neck and thorax. A considerable share is given to the surgery of the hypophysis and is timely. The chapter on infectious diseases (by John Ruhrah) is unusually comprehensive and includes a number of rarer conditions, such as Ecthema infectiosum, Kalazar, Malta fever, paragonimiasis, etc. The review of other diseases, more commonly known, is also instructive and up to date. The other sections of this review are equally important and interesting, but it is obviously impossible to attempt any detail in submitting so large a field to our readers. It is sufficient to say that this number is an excellent one and offers a large amount of valuable information upon contemporary medical progress. DYER.

Publications Received

WILLIAM WOOD & COMPANY. New York, 1915.

The International Medical Annual. 1915.

THE MACMILLAN COMPANY. New York, 1914.

The Cancer Problem, by William Seaman Bainbridge, A. M., Sc. D., M. D.

W. B. SAUNDERS COMPANY. Philadelphia and London, 1915.

Alveeolodental Pyorrhea, by Charles C. Bass, M. D., and Foster M. Johns, M. D.

THE YEAR BOOK PUBLISHERS. Chicago, 1915.

The Practical Medicine Series. Volume III: **The Eye, Ear, Nose and Throat.** Edited by Casey A. Wood, C. M., M. D., C. L.; Albert H. Andrews, M. D., and W. L. Ballenger, M. D.

PAUL B. HOEBER. New York, 1915.

Occupational Affections of the Skin, by R. Prosser White, M. D., M. R. C. S.

War Surgery, by Edward Delorine. Translated by H. DeMeric.

What Every Mother Should Know, by Charles Gilmore Kerley, M. D.

G. P. PUTNAM'S SONS. New York and London, 1915.

The Alligator and Its Allies, by Albert M. Reese, Ph. D.

LEA & FEBIGER. Philadelphia and London, 1915.

The Principles of Bacteriology, by A. C. Abbott, M. D. Ninth edition, thoroughly revised.

Modern Medicine, edited by Sir William Osler, M. D., F. R. S., and Thomas McCrae, M. D. Volume V: **Diseases of the Nervous System—Diseases of the Locomotor System.** Second edition, thoroughly revised.

WASHINGTON GOVERNMENT PRINTING OFFICE. Washington, D. C.

Public Health Reports. Volume 30, Nos. 23, 24, 25 and 26.

Clean Water and How to Get It on the Farm, by Robert W. Trullinger.

Nematodes and their Relationship, by N. A. Cobb.

Exercise and Health, by F. C. Smith.

United States Naval Medical Bulletin. July, 1915.

Report of the Department of Health of the Panama Canal for the Month of April, 1915.

MISCELLANEOUS:

Anti-Trust Acts of Louisiana. Baton Rouge, La., June, 1915.

Report of the State Live Stock Sanitary Board, by S. H. Gilliland, V. M., M. D. (N. Stanley Ray, State Printer, Harrisburg, Pa.)

The Lilly Scientific Bulletin. June 6, 1915.

Sixth Annual Report of the Committee for the Prevention of Blindness. State of New York, January 1, 1915.

The Institution Quarterly. Springfield, Ill., June 30, 1915.

Columbia University in the City of New York. The Alliance Between Columbia University and Presbyterian Hospital.

American Public Health Problems. (Prudential Press, Newark, N. J., 1915).

Address by the Hon. Elihu Root to the Union League of Philadelphia, March 23, 1915.

Reprints

Notes on the Michigan Species of Polygonatum, by Oliver Atkins Farwell.

Dementia Precox Studies, by A. S. Jutschenki.. Translated from the German with Notes and Subsequent Literature, by Bayard Holmes, B. S., M. D.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans for June, 1915.

Cause.	White	Colored	Total
Typhoid Fever	6	4	10
Intermittent Fever (Malarial Cachexia)	....	2	2
Smallpox	2	2	4
Measles	....	.....	.....
Scarlet Fever	....	.....	.....
Whooping Cough	3	2	5
Diphtheria and Croup	1	.....	1
Influena	....	.....	.....
Cholera Nostras	.....	.....	.....
Pyemia and Septicemia	.....	.....	.....
Tuberculosis	30	65	95
Cancer	26	10	36
Rheumatism and Gout	.....	.....	.....
Diabetes	1	2	3
Alcoholism	2	.....	2
Encephalitis and Meningitis	4	1	5
Locomotor Ataxia	2	.....	2
Congestion, Hemorrhage and Softening of Brain	25	10	35
Paralysis	3	4	7
Convulsions of Infancy	.....	1	1
Other Diseases of Infancy	10	6	16
Tetanus	1	.....	1
Other Nervous Diseases	5	1	6
Heart Diseases	34	36	70
Bronchitis	1	2	3
Pneumonia and Broncho-Pneumonia	13	26	39
Other Respiratory Diseases	4	.....	4
Ulcer of Stomach	1	.....	1
Other Diseases of the Stomach	1	3	4
Diarrhea, Dysentery and Enteritis	30	39	69
Hernia, Intestinal Obstruction	7	.....	7
Cirrhosis of Liver	10	5	15
Other Diseases of the Liver	1	2	3
Simple Peritonitis	.....	2	2
Appendicitis	5	4	9
Bright's Disease	21	17	38
Other Genito-Urinary Diseases	10	9	19
Puerperal Diseases	8	1	9
Senile Debility	.....	.....	....
Suicide	2	1	3
Injuries	21	17	38
All Other Causes	39	22	61
Total	329	296	625

Still-born Children—White, 16; colored, 32. Total, 48.

Population of City (estimated)—White, 272,000; colored, 101,000. Total, 373,000.

Death Rate per 1000 per Annum for Month—White, 14.51; colored, 35.17. Total, 20.11. Non-residents excluded, 17.02.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure.....29.97
Mean temperature .....84.
Total precipitation ..... 5.61 inches
Prevailing direction of wind, southwest.

New Orleans Medical and Surgical Journal.

VOL. LXVIII. SEPTEMBER, 1915. No. 3

Original Articles

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. A complimentary edition of one hundred reprints of his article will be furnished each contributor should he so desire. Covers for same, or any number of reprints, may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

REPORT ON INTRAVENOUS INJECTION OF DIPHTHERIA ANTITOXIN.

By E. M. DUPAQUIER, M. D.,

Chief of Infectious Service, Charity Hospital, New Orleans, La., with the collaboration of J. C. WALKER, M. D., and R. R. NIBLACK, M. D., Internes of the Service, Charity Hospital, New Orleans, La.

The routine injection of diphtheria antitoxin, subcutaneously, in the service, was abandoned about a year ago, for the intramuscular injection, which became the routine injection, up to quite recently, when the intravenous administration, reserved, then, only for severe and pernicious cases (chiefly laryngeal) was adopted, as the routine, IN ALL CASES.

This progressive evolution in the method of administration was based on good reasons.

First, the subcutaneous injection. It is painful (cellulitis). Absorption is slow, less complete within 24 hours.

Second, the intramuscular injection, meaning in thigh, in mass of vastus externus. It is, by far, less painful if care is exercised to use a sufficiently long needle, and not to traumatize by a rapid

and forceful "shot." Absorption is more rapid and complete, as seen by results.

Third, the intravenous injections. It is, certainly, the least painful, and the more swiftly acting, since the neutralizing antitoxin is brought, at once, in contact with the toxins. It is certainly the most logical one.

But, on April 11, 1915, occurred adverse reactions in two cases, resulting in one death, which was ascribed, perhaps rightly, perhaps wrongly, to the method.

So, the former practice, in the service, to use intravenous injections only in late, severe cases, and in all laryngeal cases was resumed, until the discussion of the subject convinces all fair-minded practitioners that such accidents are very rare, that sudden death is liable to occur under many other circumstances and is quite a common occurrence in diphtheria, where no intravenous treatment is used. Moreover, we are inclined to believe that more data will improve our technic in the future, in order to avert such accidents.

Before proceeding any further, we submit here two tableaux with remarks:

TABLEAU I.

Showing the record of cases in the Diphtheria Ward of the Charity Hospital, New Orleans, La., injected *intravenously* with diphtheria antitoxin, from December 10, 1914, to April 11, 1915.

Type of Cases	1914 Dec.	1915 Jan.	Feb.	Mch.	April	Total
Nasal	1				1	2
Pharyngeal			6	6	2	14
Laryngeal		2	3	3	2	10
Tonsillar				4	2	6
						32

TABLEAU II.

Showing the record of *intravenous* injections of diphtheria antitoxin in diphtheria ward of the Charity Hospital of New Orleans, La., from December 10, 1914, to April 11, 1915.

	1914 Dec.	1915 Jan.	Feb.	Mch.	April	Total
Nos. of injections	1	1	9	16	8	35
Vein used—						
Median Basilic (Right)						33
Jugular						2
Accidents—Severe reaction						2
Death—Following injection						1

Of the thirty-two cases reported here, twenty-one were of a severe type. Of these twenty-one cases, eight died, seven from complications which had already set in, before admission to the

service, viz., Case II, laryngeal, being almost moribund; Case X, child having paralysis of palate, pulmonary tuberculosis and toxic nephritis.

The eighth death occurred April 11, 1915, three hours after the injection. Barring this single fatal termination, the results and symptoms observed were really most encouraging, indicating a marked advance on the former treatment. The temperature dropped to normal from 12 to 24 hours more quickly and did not rise again.

The membranes disappeared quickly as seen in six out of ten laryngeal cases, which were not intubated, recovering; and of the four intubation cases, only one died; a good showing. In all cases distressing symptoms abated sooner, markedly so. Complications developed in only one case after injection—lobular pneumonia—with recovery.

Paralysis of the palate was seen only in one case (intubation case), which recovered. Convalescence was shorter, and the feeling of well-being came back sooner, even in severe cases.

Throat was cleared from the K-L bacilli much sooner, on an average, within twenty days.

The number of carriers was lessened. In addition to these advantages we lay stress on the last and not the least fact, that the method proved a great saving of serum as compared with the intramuscular administrattion; for, most cases received only the initial dose, 10,000 units, while only in three cases was the dose repeated once.

Remember that these are hospital cases, meaning cases treated under most unfavorable conditions, with maximal virulence and minimal resistance.

We will now present the reverse aspects of the subject in reporting the case which died three hours following the injection, and we will submit some comments on the subject.

Case XXXII. Death from serum reaction. The patient, a female, eight years of age, entered the Charity Hospital at 3:30 p. m. April 11, 1915.

Family history, negative. Previous history, negative. Present illness: Child took sick two days ago with sore-throat followed by fever.

Physical examination: A whitish gray membrane found on and around both tonsils. Heart, lungs and abdomen negative. Temperature 102°. Child was immediately given 10,000 units of diphtheria antitoxin in right median basilic vein.

Two and one-half hours later, child had a chill followed by high temperature of 106°, delirium, cold and clammy skin, labored respiration. Child died half hour later.

Another case, case XXXI, a woman of 27 years, admitted on the same day, April 11, 1915, and at the same hour, treated with the same serum intravenously by the same physician who had treated in the same ward many other cases with grand results, presented also strikingly severe symptoms of reaction, just like those of this child; but in her case all symptoms had disappeared in twelve hours and she was actually well in the next twenty-four hours.

We were aware of the existence of such "striking reaction" following the intravenous injection of serum, *in some cases;* and in the beginning it was for that very reason that we were not inclined toward intravenous injections at all. But subsequently some facts have made such an impression on our mind that gradually we were more disposed to consider the matter seriously.

In the first place, during our connection with the Plague Hospital in 1914 we have seen injected into the veins of all cases, as the routine treatment of plague, large amounts of serum, as much as 200 c. c. in one instance, and in one patient four years old, without accidents. The only ill-effect noted was a slight respiratory distress due to cloudy serum, which when sedimented and decanted produced no more this symptom.

At a later date we came across reports of thousands of tetanus antitoxin injections to wounded soldiers in France, intravenous as well as subcutaneous, intramuscular, intraspinal, intraneural, intracerebral, a saturation with serum. Yet we know of but one case, reported to have shown a serum reaction, nearly but not fatal, similar to the reaction observed in our cases.

Schorer (*Jour. A. M. A.*, January 23, 1915, p. 367) reports that when the diphtheria antitoxin in his series of cases was given intravenously, four injections out of sixteen were followed in from one-half to one and a half hours by striking symptoms. These were usually ushered in by a marked chill, then an elevation of temperature from 103.2° to 104° F., and in two cases by respiratory distress. All of these symptoms disappeared in from three to twenty hours, when the patient usually felt entirely well. These immediate reactions are not grave, and in themselves did not seem to be a contra-indication to intravenous injection of diphtheria antitoxin.

And now remember the good results were remarkable. In fact, it is well known now by the Schick test that intravenous injections of diphtheria antitoxin are ten times more effective. Finally, if we consider that the number of carriers is reduced by the intravenous method, then, from the immensely important viewpoint of the eradication of diphtheria, a dream so far, we ought now to advocate the use of intravenous injections more than ever before, regardless of the risks of severe reactions.

We submit that the latter can be minimized by improving the technic.

Many of us, indeed, have come back to the intravenous injection of quinin in treating pernicious malaria, with the greatest delight, since the technic has been improved by our army surgeons especially.

The old-fashioned Bacelli solution was too concentrated and to this great concentration of the drug deaths following the intravenous injections of quinin were ascribed. The solution now recommended is of a greater dilution (1 Cm. to 150 Cm.). It is carefully and freshly made, and injected lukewarm by the gravity method. Results, since, are far greater than formerly. We know this to be a fact from actual experience in practice.

We also have obtained better results in improving our technic in the administration of the meningococcus antitoxin after the present technic of the intravenous administration of quinine.

We suggest, first, that the serum for intravenous injection be made of a greater dilution, if possible a high dilution of dry globulins, not a concentrated solution, and clear, not cloudy.

Second, that it be warmed and administered at the temperature of the body, not heated to 60° C., for antitoxin is an enzymoid p. 138, Chimie Physiologique de Arthus).

Third, that the gravity method and not the hand-syringe—"push-method"—be used. Of course there is always an unknown, inaccessible individual element that may, in our cases, show adverse reaction in spite of the best technic. This is unfortunate, just as it is in other instances, where very active therapeutic measures must be used. But the method itself, for these few exceptions, cannot be discarded in the light of its great advantages.

One point, we believe, is most essential. It is that the injection should not be made at once, in those entering the hospital

walking, or after exertions of some kind, as in the two instances we reported here. Rest, a rest of at least one hour in bed, except in severe laryngeal cases of emergency, should be observed before the serum is injected into the veins; of course, with all the precautions of asepsis and the details of some improved technic such as the one mentioned above, we are now following in private work since the mishap reported here.

In conclusion we believe that the striking serum reactions are not a contra-indication to the intravenous administration of diphtheria antitoxin, and that when the technic is perfected the intravenous administration of antitoxin will be the routine method of treating diphtheria. The following letter, published here, relates to the subject:

Dr. E. M. Dupaquier,

Medical Bldg., New Orleans, La.

Dear Doctor: Our New Orleans Branch has forwarded to us your letter of May 17 referring to the work which you contemplate carrying out in connection with the use of diluted antitoxin by the intravenous method. We note particularly your inquiry as to the feasibility of utilizing our dry Antidiphtheric Globulins for this purpose. As regards the potency of the dried product, we may state that it is much more stable than in the liquid form. We have tested out globulins after five or six years and found practically no loss in antitoxic strength. The solubility has not, however, been so satisfactory and this in our opinion is the chief objection to utilizing the dried globulins for your experimental work. We may say that with all of these desiccated serum products we find a certain amount of irregularity in regard to solubility. One lot will be freely soluble and with the next considerable trouble will be experienced. The chief objection is that this difficulty in obtaining a solution is not apparent at the time the product is first made and develops under market conditions, so that, even though we carefully test out the product before it is sent out of the laboratory, difficulty in dissolving it may be experienced some time later.

May we ask whether there would be any particular advantage in using the dried serum for this purpose? Why could not the liquid globulins be diluted advantageously? It would seem to be less trouble and then no question as to solubility could arise.

We are very much interested in the line of work which you are carrying out and shall be glad to have your further advices.

Very truly yours,

* * *

THE COMBINED APPLICATION OF THE PERCY CAUTERIZATION AND INTERNAL ILIAC LIGATION, IN THE TREATMENT OF CERVICAL CANCER.*

By MAURICE J. GELPI, A. B., M. D.,

Visiting Gynecologist to the New Orleans Charity Hospital, New Orleans, La.

The present plan of treatment of cervical cancer has come as a gradual evolution. From the beginning, in early operable cases, total extirpation of course has always been advocated. For the advanced cases, when they were treated at all, they were at first simply singed with the Paquelin cautery. To the Paquelin cauterization was sometimes added the application of fifty per cent zinc chlorid paste, and this was in turn superseded by thorough cauterization with the solid copper soldering irons. Some of these cases were afterward treated with the X-ray. In 1913, I treated a number of cases with intravenous infusions of colloidal copper. While we were still struggling to find something to produce definite results in these cancer cases, Percy, of Galesburg, Illinois, presented his elaborate, clean-cut technic for cauterization. Following the adoption of this attractive procedure, Proust and Maurer, of Paris, suggested internal iliac ligation as an immediate preliminary step to the Wertheim panhysterectomy. This suggestion was also adopted, and combined with the Percy cauterization; but the ligation and burning were done in all cases. The credit for combining these two valuable procedures and of applying them in the treatment of all cervical cancers, belongs to my own friend and chief, Dr. S. M. D. Clark, of New Orleans.

PLAN OF TREATMENT.

1. The present plan is to use the combined burning and ligation, even in the frankly operable cases. In these cases, the burning and ligation are simply done as a distant preliminary step to the Wertheim total extirpation. In rare instances it may be done as an immediate preliminary step. The objects aimed at are: Actual destruction of cancer cells from below, thereby diminishing chances for grafting during extirpation; checking hemorrhage; affording opportunity for exploration of parametrium, deep pelvic and juxta aortic glands at the time of ligation; preventing annoying venous bleeding during extirpation, by pre-

*Read at the Attakapas Clinical Society Meeting, April 6, 1915. Paper intended to be accompanied by lantern slides illustrating details of technic.

liminary arterial ligation; producing a local shrinkage of the cancer mass; improving the patient's general condition, and altogether making the case a better surgical risk.

2. In borderline cases, ligation and cauterization are done with the objects enumerated above, plus that of conversion to the operable class.

3. In those extensive cases where the mobility of the uterus is impaired by invasion of the parametrial tissue and the vaginal vault, both ligation and cauterization are done from the beginning. Occasionally when an exuberant mass protrudes into the vagina, it may be necessary to limit the first sitting to cauterization, without opening the abdomen. In three weeks or less at times the combined technic may be applied.

4. In the class of cases involving the bladder and rectum, especially if accompanied by marked cachexia, no attempt is made to do anything.

Summarizing the plan of treatment then, in early cases, under ether, get a frozen section for absolute diagnosis. Then tie the iliacs and one ovarian, burn from below, and in two or three weeks do the Wertheim panhysterectomy. In borderline cases get a frozen section, ligate and cauterize. Repeat the Percy cauterization as often as necessary at intervals of about three weeks. If the case should become operable, Wertheim hysterectomy is indicated. In more advanced cases follow the same plan, repeating the cauterization four or five times if necessary. These cases offer little hope for total extirpation as a rule, but we have noticed remarkable improvement in some of them, and even if they fail to become operable, we look for a distinct prolongation of life and possibly, at times, according to Percy, actual cure, without extirpation. In the cases with bladder and rectal involvement, nothing is attempted.

RATIONALE OF COMBINED METHOD OF TREATMENT.

The question as to the underlying basis for the plan of treatment adocated is easily explained.

By the cautery at over 112 degrees F. applied for twenty minutes, we cause an actual death of cancer cells. It takes about 130 degrees or over to kill normal tissue cells. The heat is transmitted from cell to cell in all directions for from one to two inches or more. Furthermore, this degree of heat has a tendency to produce a thrombosis which in turn causes a starvation of cancer

cells. So that we accomplish by the cautery two things, immediate cancer cell death and subsequent cancer cell starvation.

What now do we accomplish by internal iliac ligation?

In considering this point it must be remembered that we ligate both the internal iliacs, also one ovarian, making a total of twenty-five arterial trunks, including the vaginals and uterines. So that the bulk of the pelvic circulation is remarkably impaired at once. Here again we have starvation as a result. The ligation also prevents the possibility of secondary hemorrhage from sloughing uterines and affords the opportunity of examining or excising for examination any retro-peritoneal glands that might be present. Summing up, we have starvation and immediate cell death produced by the cautery applied from below, and from the abdominal side we have starvation prophylaxis against hemorrhage, and opportunity to explore or extirpate glands. If later radical hysterectomy is done, we have, in addition, considerably less venous bleeding at the time of operation.

IMPORTANT DETAILS IN TECHNIC.

The following points are important in the application of the method:

1. The irons should not be hot enough to carbonize the tissues, as this prevents dissemination of heat.

2. There should be no excision of tissue during cauterization except in rare instances when a large fungating mass fills most of the vagina. This excision when done should be accomplished with the cautery.

3. The vagina must be protected by a water jacket to prevent subsequent atresia.

4. The heat must be controlled from the abdominal side.

5. In tying the iliacs the ligature must be applied close to the bifurcation (about two-thirds of an inch), so as not to miss any branches, especially the vaginals.

6. Care must be taken not to injure or tie the ureters.

7. Both ovarian vessels must not be injured, as in the case of bilateral injury of these requiring ligature, only one internal iliac can be ligated.

RESULTS.

As to the question of absolute cures, we have nothing to say for the present. No mention whatever can be made on the subject until the five year limit has expired. However, the results

up to now have proven surprisingly encouraging in spite of the fact that occasionally we have seen cases develop vesico-vaginal and recto-vaginal fistulæ. We have had a death from peritonitis and one from hemorrhage, though the latter occurred before the routine ligation of the iliacs was adopted. Remember, though, in considering this dark side of the picture, that the bulk of our cases were taken from among those that no one else would touch under any circumstances. They belonged to the class of patients who are given a box of morphin tablets and told to go home and die. Yet from this mass of derelicts we have cases that were transformed to such an extent that total extirpation could be accomplished and they are now apparently free from cancer. In one of these cases a number of sections was made from the parametrium and vaginal vault, and no carcinoma could be demonstrated microscopically. We have other cases that have been so much improved that we have the greatest hope for an early total extirpation and possibly a radical cure. We have still a number of cases whose life has been unquestionably prolonged, who are at present living quite comfortably, though we expected when we began treatment last summer that their time would have expired many months ago.

In conclusion I would say that my main reason for presenting this plan of treatment to you is that, up to the present time, it has given us, without a doubt, the best results, and the greatest promise for the future.

THE EMETINE ERROR.

By JULES J. SARRAZIN, D. D. S., New Orleans, La.

During the latter part of August, or the beginning of September, 1914, without reference to the previous labors of Chiavaro, Barrett and Smith, in the same field, the New Orleans morning and afternoon papers were aglow with a specific treatment for Riggs' Disease based on amebic etiology, promising magic results. Some weight to this rosy outlook was given by interviews with reporters which were published. A first impulse was to hold back judgment, expecting such public newspaper talks to be disclaimed as not being authorized, even though the amebic etiology and treatment were affirmed, which at that time seemed rather doubtful on the lines of utter disregard for infected cementum and

carious bone then set forth. However, on September 14, 1914, at a meeting of the Orleans Parish Medical Society, the amebic etiology and therapy were brought out on lines quite identical with the above mentioned newspaper articles.

Not having yet made any tests, but being strongly impressed by the well known systemic factors and local etiology of Riggs' Disease, believing that a sincere but dangerous error was being promulgated, I then limited myself to pointing to it in broad terms, cautioning against a blind and free use of the treatment before its value was established.

On October 26, again at a meeting of the Orleans Parish Medical Society, the emetine-ipecac treatment was presented, based on some two hundred cases successfully treated, the *Ameba buccalis* being the criminal, its ingress being explained in most cases by toothpick injuries to gingival tissue. I fully agreed that the deleterious results following toothpick traumatism rendered it an undesirable instrument in usual mouth conditions, but I also pointed out that the toothpick amebic etiology was unnecessary to Riggs' Disease, because inspissated mucus on teeth necks, charged with dead epithelial cells and infectious bacteria, furnished the local part of the etiology by themselves, aggravated by irritation from lime salt deposits when present, while the resistance of tissues was lowered by the usual dystrophic atrophy of the human maxillary and mandibular structures. I had by that time been testing the emetine-ipecac treatment, and stated my results. Tumefied, bleedy gums, in habitually neglected mouths had markedly improved as a result of removing salivary calculi and brushing away a part of the septic films off teeth necks. Results from mouth hygiene are generous beyond the proportion of its thoroughness, although perfect results come from perfect technic only. Fluid extract of ipecac, or even plain water, would benefit tissues habitually infected by filth; the patient's attention having been drawn to mouth cleansing, it being done a little more and better than usual. I also reported at the same time that in no case of loose teeth, or suppurating pockets, or carious alveoli, had I seen any objective improvement from the ipecac-emetine treatment. Discomfort to patients from such teeth usually lessens as any treatment is instituted. This implies no real change of conditions, and, as time demonstrates, no cure. Of course, I had abstained from any systemic measure other than emetine hy-

podermics, and locally from going beyond the removal of chunky deposits off roots. I was testing the amebic-emetine-ipecac treatment clinically. In some of those cases hypodermics of emetine had been given for six consecutive days, followed by weekly injections, doses ranging from 2-3 gr. to 1 gr., while ipecac was irrigated in fundi of all pockets and used on the tooth brush, with no real improvement in over five weeks.

On October 23, at a meeting of the 1st and 2nd Districts of the Louisiana State Dental Society, the amebic theory merged with the infective mucus film etiology I had mentioned two days earlier, instead of the amebæ being considered independently. Since amebæ feed off the protein molecule broken up by infectious bacteria, it was unquestionably proper to locate them in inspissated mucus films which supply the true etiology of Riggs' Disease. Bacteriologists are generally agreed that *Amebae buccalis* have no pathological significance, and feed as just mentioned, while, on the other hand, the *Ameba histolytica* of Schaudinn and Craig, and the *A. tetragena* of Hartmann and Vierick are tissue burrowers. Actual penetration deep into tissues should not be confused with compression between diseased cells at the surface or fundi of pyorrheal lesions, which are being disintegrated as they succumb to infection, and between which a microscopic protoplasmic mass will readily imbed itself.

The amebic etiology has just recently gone into still another phase, making the *Ameba buccalis* the carrier of pathogenic germs into the walls of alveolar pockets. Since laboratory experiments upon autolized tissue, amebæ in symbiosis with infectious bacteria, show the former throwing off the latter after feeding on the protein molecule freed by them, it is quite devoid of any surprise that pathogenic bacteria should be present on *Ameba buccalis*. For a few infectious bacteria thus located, there would be myriads of them independently diseasing soft tissues, the leukocytes of which are neither numerous nor active enough to destroy them as rapidly as they gain entrance. If we bore in mind that Riggs' Disease requires two causes to produce its suppurative stage, we would be less easily disturbed by any unproven etiology ascribed to it. The dystrophic atrophy of alveolar tissues, due as much to the fact that arterial blood must be pumped upwards to them as to their being transitory structures, explains why the suppurative process easily results from adjacent infectious cervical films or

deposits. We there have the predisposing, or less resistant, systemic condition, and the determining factor. Under favorable conditions the latter is resisted by the former. Again, in the absence of local infection, but with destruction of alveoli due to insufficient blood nourishment, teeth sometimes become lost from lack of support. With these facts in view, any restricted local etiology becomes puerile.

Dr. Anna Williams of the Park Laboratory of the New York Board of Health has just been conducting a series of tests where *Amebæ buccalis* have been found in school children's mouths, as follows:

Healthy gums 30%
Healthy gums with carious teeth.....50%
Calculi and receding gums.....84%
Tumefied, bleedy gums.....94%

Amebæ are so widely distributed in nature that no surprise need result. As we are not wont to expect Riggs' Disease in the mouths of children, these investigations rather point to the increased presence of amebæ in more luscious pasture grounds, as a result of favorable conditions for their nourishment, but not as a cause of disease.

There is here no intention to question the destruction of *Ameba buccalis* by emetine or ipecac. This is quite beyond doubt. On the other hand, there is strong reason to believe that these amebæ are unjustly accused of producing conditions they only enjoy, that the health of innocent victims is being threatened by strepto- and staphylococci allowed to carry on infection while amebacides constitute treatment. Unquestionably, it would seem desirable to sound that warning as loudly in the public's ear as was the sincere but misleading theory of amebic etiology. It would be far better for some teeth to be speedily sacrificed than to jeopardize health by maintaining dangerous foci of infection.

All the successive negative amebic treatment results which I have seen have for some time convinced me that the amebic etiology belongs to that large class of theories which may only be applied with caution before conclusive tests are made, and I regret it sincerely, first, because I have faith in the sincerity of the men who have devoted great energy and time to these original researches, and second, because hope for a rapid and easy cure seems blasted, which would have been a boon to humanity. Alone, one test could outweigh painstaking, thorough, clinical evidence based

on intimate knowledge of Riggs' Disease pathology. This would be the production of the suppurative disease in the mouth of a fairly healthy subject affected with superficial gingivitis, dental chair and home oral prophylaxis being perfectly carried out, while, following the latter nightly, at bedtime, gingival margins would be generously smeared with a pure culture of *Ameba buccalis.* Such a test would carry weight if conducted with flawless details. Considering that cultures of amebæ on autolized tissue are not infrequent laboratory technic, such cultures should be accessible.

Whenever iodin is painted on gums, or any germicidal solution used thereon, or in pockets, other than emetine or ipecac, a reliable factor is brought in the treatment which destroys micro-organisms other than amebæ, producing results due to reaching the correct etiology of the disease. Improved conditions resulting should not then be credited to the emetine-ipecac treatment. A mouth wash containing iodin will also be similarly misleading if used in connection with the amebic treatment. Likewise, the so-called "planeing" of roots removes material infected by germs other than amebæ, and must also be avoided in testing the merits of the emetine treatment.

A factor which sometimes misleads experimentation with emetine hydrochlorid is that it is mildly germicidal to pathogenic germs such as strepto- and staphylococci, and it is hemostatic.

Since the "End"-*Amebæ buccalis* do not carry infectious germs far beyond necrotic areas, but are present in the disintegrating walls and at the fundi of pockets filled with pus, and bounded by carious bone and infected cementum, it is reasonable to deduct that emetine hypodermics, or ipecac per os, while they destroy amebæ, and may serve to lessen the danger of systemic infection, play little part in inhibiting micro-organic growth inside Riggs' pockets, where, of course, no blood circulates. Quite similarly, vaccins may exert a favorable influence on systemic morbid manifestations resulting from infection by germs identical with those composing the vaccin but, owing to the fact that no blood circulates through the pockets of suppurative Riggs' Disease, it is idle to expect that either these pockets themselves, or their contents, may be affected by such hypodermic injections. It is what is done locally and directly into the pockets themselves, which is the beneficial procedure in both instances. Therefore, irrigating pyorrheal pockets with emetine or ipecac, owing to a weak germicidal action, will lessen, without completely checking the pus exudate in chronic

cases. This diminution is more marked after irrigating pockets for the first time than at any subsequent repetition, simply because pus does not accumulate as thickly in such lesions, in twenty-four or forty-eight hours, as in the preceding months during which treatment was either completely omitted or done haphazardly. In other words, due to far greater germicidal power to truly pathogenic micro-organisms, if a solution of iodin crystals had been substituted for topical use, the control of suppuration would have been far greater, although not complete without the removal of local infectious and irritating factors, backed by adequate measures where indicated.

Again, it may be easily understood why results misleading and deceptive to the casual, inexperienced, or superficial observer of Riggs' Disease conditions, may occur, in the acute stages, under emetine-ipecac treatment, before old chronic pus pockets have existed. There yet being no such pus pockets on roots, the topical use of ipecac inhibits the surface growth of strepto- and staphylococci, while blood hypodermically charged with emetine protects the gums it permeates. Add the hemostatic action of emetine and the usual fact of more and better mouth hygiene having just been instituted, and gingival conditions would inevitably improve before the formation of pus pockets.

The local role played in the production of Riggs' Disease by inspissated mucus, bacterial, cervical plaques is so plain to students of that etiology (the adjacent tissues succumbing to that infection), frequently coupled as it is with irritation from hard deposits, and habitually in the presence of dystrophic tissue atrophy, that it seems puerile to trained Riggs' observers to conjure innocent non-pathogenic amebæ to cause lesions they only inhabit to feed therein, and the pathology of which does not suggest their concurrence.

Since it has recently become common routine medical practice to treat Riggs' Disease hypodermically, or by mouth only, it would behoove the dentist as well to announce a specific treatment for a systematic disease, the phases of, and therapy for which he knows not, except from hearsay of medical practitioners with limited special experience therewith, and to then loudly herald his new system of treatment before its being thoroughly tested in professional circles. Results from such well meaning errors are rendered harmful in proportion to the weight of authority which sincerely promulgates them, countless healths and lives being

threatened by septic oral conditions, which should have been corrected; in many cases extraction being far preferable to their continuance. The gravity of the situation is increased by local directions for mouth hygiene being given by some physicians in connection with the new specific emetine treatment, which disregard the fundamental etiology of infectious bacterial plaques on proximal teeth necks, advising brushing teeth without stimulating gingival circulation, and without even passing floss between them. Indeed, there would be vastly more oral prophylaxis in discarding the tooth brush entirely, but insisting instead on thoroughly rubbing a minute flat tape on all proximal teeth faces and necks, mesial and distal, and employing a clean rag to break up thickened mucus films on all exposed dental surfaces, even though gingival stimulation, along with other well established and proven oral prophylactic measures, which rest on the combined experience of experts in that line, was discarded by medical men in assuming the role of mouth hygienists. Discarding the tooth brush might even appeal to a few sensational dentists who accuse it of being a carrier of infection. Of course, if ten or one hundred surgically clean brushes sweep in as many filthy, septic mouths, and later, after a thorough rinsing in cold water and drying (which inhibit bacterial growth), are used to inoculate culture tubes, an abundant growth of pathogenic germs must surely result. Conclusions drawn from such a procedure are strikingly unscientific because they take no account of the fact that vastly more infectious material will have been removed from the mouth than can possibly be left in the brush, because they do not duplicate conditions which obtain when truly germicidal dentifrices are employed, and because, even as mouth infection is reduced by repeated brushings, it will continue to remain so far in excess of that in the brush as to render the latter insignificant.

The experience of Dr. Eugene S. Talbot with strong solutions of iodin in oral therapy at once sets at rest the claim that germicides may not be employed on the oral mucosa which are capable of destroying infectious bacteria in the mouth. Dentists who entertain a sentimental or sensational fear of the tooth brush would act more wisely by advising its immersion in an aqueous solution of iodin, followed by rinsing, after each mouth cleansing, than by misleading the laity, decrying the brush without offering a real substitute for it.

The paramount importance of patients constantly breaking up

and removing infectious inspissated mucus films from all faces of teeth necks, and developing a highly polished surface thereat, especially mesially and distally, where septic deposits are otherwise left undisturbed, is easily realized by considering that infection otherwise causes the time honored pathological stages of congestion, inflammation and suppuration, wherever tissue resistance is lacking, as is usually the case in gingival ones.

Neither the proper, root to biting surface, brush motion, nor an efficient polisher carried by it dry, have ever injured tooth structure. It is the improper crosswise motion of bristles which wears transverse cervical grooves and irritates gingival margins, quite regardless of the dentrifice employed, unless it be gritty beyond reason. Bristles and water, or soap, and chalky impalpable dentrifices, are unable to completely remove septic films from and develop the protecting polish on exposed surfaces of teeth, while a waxed thread or tape is similarly inefficient in comparison with positive polishing powder applied by suitable agents in both instances. It has been proven that five years' daily polishing of natural teeth with finely pulverized pumice stone resulted in perfect, lustrous dental surfaces.

As to the "End"-*Ameba buccalis,* it is perfectly in accord with natural law that they should be feeding in the bacterial plaques mentioned, that they should pass on to recesses in gingival margins, as invaded and diseased, and that, as peridental tissues break down in the above described etiological and pathological processes, they should occupy the fundi of pockets, where a more favorable pasture invites them: stagnant pus cells, not red blood corpuscles. Like ducks, they should migrate to more favorable feeding grounds; but not as fast. They are unquestionably apt to be present, but not accountable as pathological factors. Etiology and clinic both thus point.

PELLAGRA IN THE UNITED STATES.

By E. M. PERDUE, M. D., D. P. H.,
Professor of Tropical Medicine, Eclectic Medical University, Kansas City, Missouri.

This article has been prepared as an especial appeal to the physicians of the South. Because of the conditions herein referred to, the physicians of the South are called upon to combat this disease. Pellagra has gone unchecked long enough. Unless it receives proper attention, from the very nature of things, especially

from conditions peculiar to the South, it is bound to increase. Under these conditions it is a menace to the health and the economic progress of this rich portion of our country. Therefore it is high time that we recognize that we have had a surfeit of the so-called scientific research based upon impossible hypotheses. Too much time has been lost and worse than wasted on the corn theory, the "buffalo gnat" theory, the fly theory, the proteid diet theory. Too many hypotheses have been the bases of years of useless work. Let us look at the condition about us. Let us not overlook the obvious any longer.

To a trained epidemiologist, pellagra is a chronic intoxication. To a physician who knows anything about the human tongue it is an acidosis. These two facts eliminate parasitology, bacteriology, transmissibility, infection and heredity. If a patient who works in a lead furnace comes to one of you with blue gums, loose teeth, wrist drop and colic, you do not look for bacteria or talk learnedly of serum treatment. If he has been overdosed with mercury and is salivated you do not give him thymol for worms. If he be an habitue of alcohol, opium or morphin he is the victim of a chronic intoxication. So is the pellagrin.

Pellagra is very prevalent in Roumania. Some 50,000 to 75,000 people in that country are its victims. Italy has 100,000 pellagrins. It is not a far fetched conclusion that there ought to be a common factor between the prevalence of pellagra in Roumania and Italy and its prevalence in Virginia, North and South Carolina, Georgia, Alabama, Mississippi, Louisiana, Texas, Oklahoma, Arkansas, Tennessee, Kentucky and Missouri, and the lesser prevalence in the New England States, in Michigan, Illinois, Indiana and California. In all these countries it is a disease of domestic animals as well as man. The dogs, cats and cattle have pellagra in Italy. They also have it in the United States. Why is pellagra scarcer in Michigan, Indiana, Illinois and Kansas than in South Carolina or Georgia? Why is there little or no pellagra in North and South Dakota, Montana, Idaho, Wyoming, Utah, Colorado, New Mexico and Arizona? Why is there no pellagra in northern Oklahoma while it is very prevalent in southern Oklahoma south of the Wichita and Arbuckle mountains? Why are Nebraska, Kansas, Illinois, Iowa, Eastern Colorado and Northern Oklahoma and many other regions prairie land? Why do pellagrous regions have "piney woods," chestnut, beech and sugar

maple? Why are the "black lands" of Texas prairie? Why is the area of the "Selma Chalk' of Alabama prairie? Why is there no pellagra in regions of the South where the water is "limestone" water or "hard' water? Why is pellagra strictly localized and contracted in the South and in other regions for that matter, where the water commonly drunk by the people is "freestone" water or "soft" water? Why does the map of the geographical distribution of pellagra absolutely coincide with the map of the geological distribution of clay soils? Why is pellagra on the increase? There can be but one answer to all of this, and therein lies the cause, the prevention and cure of pellagra.

Pellagra is a chronic intoxication due to colloidal silica in solution or suspension in drinking water.

Pellagra is strictly localized and contracted in those regions where the water commonly drunk by the people is derived from or is in contact with clay.

A large portion of the hill country and the plains of Roumania is clay derived from the disintegration of the igneous and crystallines rocks of the Carpathian Mountains. The Italian peninsula is covered with clay derived from the disintegration of the granites, feldspars, gneiss and serpentine of the Alps and Appennines. The small proportion of alkalies originally in these minerals has been dissolved out and long since contributed to the salts of the Black Sea and the Mediterranean.

In North America the Appalachian System, the Height of Land, the Ozark and Boston Mountains in Missouri and Arkansas, the Arbuckle and Wichita Mountains in Oklahoma, and their continuation in the highlands of Texas, are the oldest land formations. The slopes toward the ocean and the gulf have been leached by the rainfall of geologic ages. Since the Colonial Period they have been progressively denuded so that their alkalies and organic humus are gone. Their soils are red and yellow clays. A large part of the Mississippi Valley was once an inland sea. It contains its alkalies. It has large areas of limestones. Its water supplies are hard. Its soils contain alkalies. They are largely dark in color, do not support pine forests, are covered with prairie grass in the primitive state. To the north is an area scarred by glaciation. It is covered with several feet of glacial drift derived from the granites of the north. This surface soil is also acid, but it has a substratum of limestones. Part of it supports pine forests.

Acidity and alkalinity are so intimately associated that there is very little pellagra in this region. The Missouri River crosses great alkali plains. Its waters are hard. The cities which take their water supplies from the Missouri River have no pellagra. The Arkansas River flows from Colorado through the great alkaline plains of Kansas and Oklahoma. Its waters are hard. It flows into the pellagrous regions of Arkansas. The city of Little Rock, in the very heart of the pellagrous region, takes its water supply from the Arkansas River. The people who habitually use the city water do not have pellagra. The people who use well and spring water have pellagra.

The writer is a sanitary and chemical engineer as well as an epidemiologist. As I write I have before me a report on the clays of Georgia and the other reports of the Georgia Geological Survey on the Granites of Georgia and the Geology of the Coastal Plain. I have read Bulletin No. 2, "The Clays of Mississippi," a "Preliminary Report on the Clays of South Carolina," "Clay Deposits and Clay Industry in North Carolina" and the underground water supplies of Alabama, Georgia, Mississippi, Florida, North Carolina and Virginia. I have also a complete file of the reports of the State Geological Surveys of Alabama, Georgia, Tennessee, North Carolina and Virginia. The geology of all these states is very similar. There is the mountain region in the west of the northern members and in the northern part of the southern members. Toward the Atlantic ocean is the Piedmont Plateau which extends from the mountains to the Coastal Plain. The boundary between the Piedmont Plateau and the Coastal Plain is the "Fall Line" which extends from Columbus, Georgia, to Augusta, Georgia, and on north in a curve conforming to the general trend of the mountains and coast line, crossing the James River at Richmond and the Potomac at Georgetown. The Piedmont Plateau is covered with residual clays formed from the weathering and disintegration of the igneous and crystalline rocks of which the plateau is composed. The Coastal Plain is formed by sedimentary clays which have been washed down from the Piedmont Plateau. In Alabama and northeastern Mississippi the southwest end of the Piedmont Plateau is called the Ashland Plateau. Its soils and the soils of the Gulf Coastal Plain are practically the same as those of the Atlantic Coast States. The Piedmont Plateau is not so prominent in states north of Virginia

as the mountains come so much nearer to the coast. However, the clays are responsible for the pellagra of the New England States.

All these conditions have been thoroughly worked out by the United States Geological Survey, the State Geological Surveys, and the Bureau of Soils of the Department of Agriculture. No essential fact in the epidemiology of pellagra is lacking. The Bureau of Soils has mapped almost all of the pellagrous region so carefully and on so large a scale that the country roads and farm houses are indicated. The soil maps of counties in the southern states are as large as a common table top. More surveys have been made in the southern states than in any other area. The water supply papers of the United States Geological Survey are replete with information as to the high silica content of the surface waters of this region. The Superior Analyses of Igneous and Crystalline Rocks of the United States Geological Survey leave nothing for the student of pellagra to do. It has been determined that samples of soils of pellagrous regions when prepared and dried do not effervesce when treated with hydrochloric acid, evidencing the absence of lime, and that solutions of such soils turn blue litmus paper red, evidencing their acid character. The Thompson-McFadden Pellagra Commission of the New York Post Graduate Medical School and Hospital spent three years and a large appropriation at Spartanburg, South Carolina, in the study of pellagra. They visited the pellagrous families, studied the economic conditions of the farm and urban population, paid especial attention to the conditions of life, housing, conditions of labor and the food supply of the "mill villages," divided the population into classes, sexes, races, etc. They studied the flies, mosquitos and buffalo gnats. They state in one of their reports that they did not study the water supply because it had nothing to do with pellagra! Ten years before the Thompson-McFadden Pellagra Commission went to Spartanburg Co., South Carolina, the Bureau of Soils of the United States Department of Agriculture, in a very carefully prepared monograph with a large and excellent map had set out in full the cause of pellagra in Spartanburg County, South Carolina. It is set out in the Soil Survey of the Campobella Area, Bureau of Soils, Washington, D. C. In face of all this the United States Public Service and these very

learned (?) commissions go on deceiving the profession and the public as to the cause of pellagra.

The State Board of Health of Tennessee through its Pellagra Commission distributes a map of the geographical distribution of pellagra in Tennessee. This map coincides with the geological distribution of clays in Tennessee. The western Tennessee region between the Tennessee and Mississippi rivers is alike famous for pellagra and the brick and tile industry. The writer has received letters from physicians all over the South concerning pellagra. They all come from the clay regions.

The constant drinking of water containing colloidal silica in solution or suspension results in the storing of salts in the tissues, abstracting water from the tissues and setting acids, especially hydrochloric acid, free. The abstraction of water results in a drying of the tissues, the disappearance of fat, the drying and wrinkling of the skin. The serous fluids dry up, the digestive fluids are lacking. The body loses weight. The nervous system exhibits the symptoms of drying or abstraction of water, first hyperesthesia, followed by paralysis. The acidosis is evidenced in the digestive disturbances, the burning, the tongue and the classical gauntlet and mask made worse by heat. The classical triad of cutaneous manifestations, digestive disturbances and nervous disturbances are identical with silica intoxication.

Now the specific cause of pellagra being known to be a mild acidosis caused by an acid of slow absorption, the rational treatment is the simplest antidote of this acid. It is well known that silica is found in colloidal solution only in the acid condition. In chemical analyses of the clays it is put in evidence by rendering the solution acid with hydrochloric acid. It is also well known that it is neutralized by alkalinity. The general prevention of pellagra, therefore, is the simplest alkalinity, the common, simple alkali with which silica is so commonly associated in the ground. It is not necessary to make up a serum, a toxin, an antitoxin. There is no opportunity for "high brow" posing or showing of superior knowledge or laboratory training in the preparation of sera to be dosed out in ampoules. Since the patients contract pellagra from drinking soft water, have them drink hard water to avoid contracting pellagra. This observation is not so profound as to require submission to the Rockefeller Commission or to the Carnegie Foundation. Any ordinary colored woman who washes

dishes or clothes or does common scrubbing knows when the water is hard or soft. If hard water is not readily accessible put a little lime in the water at hand and make it hard. The purpose is to prevent people, the good, honest, average folks of the South from having pellagra, and not to promote abstruse, useless theorizing and so-called research.

Now if your patient has already acquired pellagra, that is, is manifesting the symptoms of the acid intoxication, it will be necessary to get the antidote into the system where it will counteract the poison. The best antidotes are the alkaline carbonates, the next, the carbonates of the alkaline earths. Because of the hydrochloric acid in the stomach, and also because of the fact that the chlorids exert no beneficent influence, it is necessary to use an excess of alkali if administered by the mouth or to administer a mild, bland substance hypodermically. The best remedy for hypopermic administration is sodium citrate. It is neutral, does not generally cause any more inconvenience than a hypodermic of distilled water, is readily absorbed and is converted into sodium carbonate which at once commences to neutralize the acid intoxication. In view of these facts the writer cannot see why the strenuous advocacy of salvarsan and arsenic as specifics. Prepare a ten per cent solution of sodium citrate. Take up one cubic centimeter in an ordinary hypodermic syringe and inject deep into the tissues, preferably of the back or gluteal region. Repeat once a day for the first week or two, then on alternate days until the patient is well. The ordinary case will require from 30 to 60 days for a complete cure. This treatment will cure without change of residence, work, diet or environment, and even without change of drinking water, but it is well to drink copiously of hard water and to treat the symptoms symptomatically and to do everything to aid nature in the elimination of the intoxication while the antidote is doing its work. Fecal impaction should be broken up and the bowels cleaned out by enema. Then the bowels should be kept open so that they move at least once a day. The burning in the stomach should be allayed by milk of magnesia or calcium lactate, spasmodic vomiting controlled by concussion of the fifth dorsal spine and treated with gelseminum, the erythema treated with ointments and the general system toned up with tonics.

But in all the study of pellagra, do not get away from the following basic facts:

1. Pellagra is a chronic intoxication caused by colloidal silica in drinking water.
2. Pellagra is strictly localized and contracted in those regions where the water commonly drunk by the people is derived from clay.
3. Pellagra is prevented by drinking hard water. Lime can be added to soft water.
4. Pellagra is cured by the administration of any alkali which will neutralize the silica.
5. The simplest treatment is the hypodermic administration of a 10% solution of sodium citrate, once a day at first, later on alternate days.
6. The remedy has been successful when administered by the mouth. This method requires more, and a longer time.

CYSTICERCUS CELLULOSÆ OF THE HOG.

(Tænia Solium of Man)

By Dr. W. H. DALRYMPLE, M. R. C. V. S., Baton Rouge, La.

Quite frequently the Department of Animal Pathology of the Experiment Station at Baton Rouge receives specimens of "measly pork" for examination and identification, and some of them come from practising physicians in the country who do not seem to be familiar with this condition. It has occurred to the writer, therefore, that a few words of explanation, showing the connection between cysticercosis in the hog, and tæniasis in man, from this particular parasite, might be of interest to those readers of the JOURNAL who may be, at times, confronted with the human tapeworm problem in their practices.

The accompanying illustration is a beautiful specimen of the hydatid cysts appearing on the surface of the heart of a hog which, as we have just indicated, was sent to the Experiment Station for identification. The condition is not confined to the heart, however, but may be found in other parts of the general musculature, a number of specimens of which we have in our pathological collection.

Wherever there is found tæniasis in man, locally, there is generally, also, found some hogs suffering from cysticercosis, and vice versa.

The *Tænia solium* is, of course, a two-host parasite, viz., man

Cysticercus Cellulosæ of the Hog. (Tenia of Man).

and the hog. The defecations of the human being containing the eggs of the parasite are ingested by the hog, and the eggs after hatching, become encysted in some part of the muscular system of the animal as the *Cysticercus cellulosæ*. If permitted to remain there, their life-cycle is cut short, and no further damage is done by them, except to the hog. But if this "measly pork" should be consumed by the human being, not sufficiently cooked to destroy the cyst, it then develops into the *Tænia solium* in the intestinal canal, and produces the tæniasis periodically encountered in certain localities. In short, the hog gets the egg from the contaminated excrement from the human being afflicted with tapeworm; and the human being becomes infested with the tapeworm by consuming insufficiently-cooked pork containing the cyst. And while this condition is one that does not seem so well understood as it might be, even by practitioners in country districts, it ought not to be difficult of eradication, especially if more attention was paid to the inspection of meats that are exposed for human consumption.

METHOD TO LESSEN PERINEAL AND EXTENSIVE VAGINAL TEARS DURING CHILD-BIRTH.

By PHILIPS J. CARTER, M. D., New Orleans.
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Both practicioner and obstetrician of the past seemed indifferent to the ordeals of suffering his patients would undergo in after years from simple tears of the vaginal and perineal floor during child-birth. My idea in this paper is not to commend, nor to criticise the old practitioner in his antique methods of delivery, but simply to improve upon what has puzzled obstetricians for a long time.

Obstetrics has for some unknown reason lain in a dormant state, in so much that it was looked upon with little consequence of its morbidity and mortality; but it has of late been modernized and brought forward to the realization of its more serious consequences in its ante-partum, intra partum, and post-partum stages. Statistics show that 30% of primiparæ are lacerated at the time of the birth of their first born, be it a first or second degree laceration, and 10% of multiparæ; 3% show tears extending down into and through the sphincter ani. We all know that a certain num-

ber of lacerations are unavoidable while quite a good many are avoidable.

In reading over a number of periodicals and personally watching obstetricians deliver cases, I find that all their methods are shown to be practically the same, as may be seen in any modern text book of obstetrics. We see the delivery of the head as it bulges the perineum retarded by the obstetrician pushing back on the head, claiming that in this manner it allows time for the perineum to dilate. The left hand is seen pushing the head down and back, while the massaging and the supporting of the perineum together with the perineal body is conducted by the right hand and actually lies in contact with this structure. Just for a moment, what does this do? We know that the purpose in this mechanism is to allow for the thinning out and stretching of the vaginal outlet and perineum. The left hand simply defeats nature's purpose at this stage, which is extension, and also presses the vaginal walls tightly together, making it more liable to slough and necrose. The right hand and especially the thumb and the index finger of the right hand are seen actually pressing against the perineum, therefore pressing it against the head. That this last measure does not support the perineum is self evident, it simply tends to increase the liability to necrose and tear, and at the same time tends to keep the head flexed, whereas it should be beginning to extend. It therefore follows when the head is delivered, it delivers in the largest possible diameter, the occipito-frontal. This would put the vaginal outlet and perineum on an enormous stretch, and the perineum most surely to give away. You cannot support the perineum, neither can you lessen the head pressure on the perineum, by holding or pressing on that structure per se.

The method I shall describe is not a new one, nor is it very ancient, but perhaps the obstetrician at times forgets its principles, and I simply want to recall something about which he has probably become negligent and especially for the young obstetrician who is going out to-day. The method allows due time for vaginal and perineal relaxation, allows the head to assume its smallest possible diameter in passing the vaginal outlet, relieves to a considerable extent the pressure of the head exerted on the perineum structures, and with a much less tendency to vaginal and perineal lacerations. This method can only be practised successfully with the woman on a table or some hard flat surface. The purpose of this

is to have your patient in such a position that the rectum is plainly visible, and the tip of the coccyx plainly felt.

The head is allowed to progress until it is seen to distend the vaginal outlet. Having the position of the head identified, you wait until the occipital, not the sub-occipital region, shows itself under the symphysis. At this time the brow is at or nearly past the tip of the coccyx. The left hand is then put, palmar surface, upon the presenting bulging occiput, while the pulps with the aid of the tips of the fingers of the right hand are introduced under the rectum and just in front of the coccyx, which is plainly felt with the presenting part. With the two hands in position as just described, pressure with the hand muscles only is exerted. The fingers of the right hand gradually but gently are directed downward, inward and upward, while the palmar surface of the left hand makes an upward excursion, this excursion being the first maneuver in the extension of the head. The effect of this combination means, first, beginning extension of the head, and second, the support of the perineum. The perineum is supported alone by the movements of the right hand in pushing the lower presenting part of the head upward. At the stage when the occiput is well under the symphysis, the brow has passed over the tip of the coccyx. Once the presenting part has passed over the coccyx, it is a very easy matter to cause the head to assume extension. By this process you merely support the head between the two hands, which act as a sling, and which, taking practically all the pressure off the perineum, gives less stretching of the perineum, in that you have substituted the smaller diameter of the head to be born. Having the occiput well under way of the left hand, and the brow in the right or fingers of the right, the same mechanism is kept up until the chin presents and can be felt at the coccyx, and which is in turn caught with the hand, while the upward movement of extension is still progressing. Once you have the chin and occiput caught between the two hands, you can hold the head there as long as you wish, and without any undue pressure, and without having to push the head back, fearing the perineum will tear from lack of dilatation. When you are ready to deliver, simply push up the chin with the right hand, guiding the occiput in the left, and in so doing, you are imitating the third maneuver in the mechanism of labor, still holding and extending the head by upward maneuver with the left, and very slowly you will see the sub-

occipito bregmatic diameter present into view, followed by the delivery of the forehead, nose and chin successively.

In many of these cases it is a very easy matter to get the head over the perineum without a tear, but some one has answered that he gets most of his tears in delivering the shoulders. The delivery of the shoulders should not give any more trouble than the head. Once the head is born, we have two alternatives; either to deliver the shoulders and body at once, which I always do, or wait until nature delivers it with her next pain. If you wait for nature to expel it with her next pain, you will find that the shoulders will almost pop out under your fingers, simply because you have an irregular body to deal with, and the same force expelling the head will expel the shoulders with much more rapidity, and in these instances you are liable to tear with the shoulders. Once the head is born, if you grasp the head with the palms of the hands, one on either side, and pull in a downward direction, the anterior shoulder will be seen to present underneath the symphysis. When this occurs, continue the pulling, with gentleness of course, until the anterior arm has been delivered as far as the mid portion of the humerus, after which the left hand and wrist encircle the head to lift it up, and at the same time place the right hand under the rectum and support the posterior shoulder, just as with the brow and chin. This maneuver will lift the shoulders from the perineal floor, and with little risk of tear. Needless to say the anterior, then the posterior hip are next delivered by the same mechanism.

I have seen failure after failure of the fetal head to be born, simply because prominent ischial spines acted as substitutes for the right hand, which were immovable, and not until the above maneuver was done and the brow lifted from the spines, was the head allowed to be born. This method allows a more safe delivery, and at the same time you can see any perineal tear that is going to take place before the head is born. In other words you can readily see, in successive steps, the perineum peeling back over the head.

To make your tears even less frequent, give your patient just a few drops of chloroform after you have the head controlled at the vaginal outlet, which will in turn relax the perineum, should there be any rigidity and at the same time this relieves the pain

that these patients experience, together with the retching accompanying this stage.

Rongy, in the *Journ. A. M. A.*, May 11, 1912, cites an instance in which he delivered a baby through the perineum, leaving a strip of perineum covering the fourchette, and exposing the bowel for quite a distance up. This was done after all methods of extending the head had failed. He could not get the head to extend. Whether or not he practised the maneuver I have just outlined, I am unable to say.

ASTHMATIC ATTACKS AND THE INHALATION OF FLOUR DUST.

By EMILE A. BERTUCCI, M. D.,

Adjunct Professor of Clinical Medicine, Louisiana Post-Graduate School of Medicine; Visiting Physician, Charity Hospital, New Orleans.

An asthmatic attack as we all know is a paroxysmal dyspnea due to a spasmodic contraction of the bronchial muscles accompanied with a wheezing sound, a sense of oppression and constriction in the chest, cough and a certain amount of expectoration.

All writers agree that in a great majority of cases of true so-called bronchial asthma, there is a strong neurotic element. Many look upon it as a type of neurosis in which there is a spasm of the bronchial muscles or a turgescence of the mucosa resulting from disturbed innervation, pneumogastric or vasomotor.

Before considering flour dust as one of the exciting causes in the production of the attacks of asthma, I will briefly consider some of the general facts which may be mentioned as to the etiology of this disease.

(1) A type of neurosis, in that it is more often seen in those with irritable and unstable nervous systems. Attacks being associated sometimes with neuralgia or even epilepsy.

(2) Spasm of the bronchial muscles a theory which has the largest number of adherents and the original experiments which were made by C. J. B. Williams and confirmed by Brodie.

(3) Fluctionary hyperemia of the bronchial mucous membrane (Traube); vasomotor turgescence (Weber); diffuse hyperæmic swelling (Clark).

(4) That it is a specific form of inflammation of the smaller bronchioles as described by Curschmann as "bronchiolitis exudativa."

(5) Spasm of the diaphragm and reflex spasm of all the inspiratory muscles.

According to classification, I will endeavor to make plain in order that we may understand what we mean when we speak of an asthmatic attack, viz.:

(1) Those asthmatic attacks due to organic disease: (a) Renal; (b) Cardiac; (c) True bronchial.

(2) Reflex Asthma: (a) Nasal affections the most common cause of asthma of nasal origin being ethmoiditis accompanied by nasal polypi. In other cases hypertrophy, hyperplasia, and other lesions appear to cause it. On the other hand, they may be present without exciting asthma. (b) Disturbances of stomach, intestines or reflex influences from the genital organs. (c) Hay asthma.

(3) Toxic asthma: (a) Indican asthma, by absorption of toxic material—indoxyl potassium sulphate—producing typical asthmatic attacks.

(4) Thymic asthma, supposed to be seen in children according to theory due to enlargement of the thymus gland in which there is spasm of the adductors of the larynx.

(5) Pressure asthma: mediastinal tumors, enlarged bronchial glands.

One of the most striking peculiarities is the extraordinary variety of circumstances which at times induce a paroxysm. Among local conditions, climate and atmosphere head the list. Breathing the air of a particular room or a dusty atmosphere may bring on an attack. Odors of flowers, hay, emanations from animals, as horse, dog, cat, etc., may at once cause an outbreak.

A case, which I will now cite in which the inhalation of flour dust seemed to be the only exciting cause, was a baker by occupation who said that he suffered from asthmatic attacks when engaged at his work, where the atmosphere was constantly laden with flour dust, and when away from this he went free of an attack, but as soon as he resumed his work in the bakery and inhaled flour dust he at once had a paroxysm of asthma necessitating a change of occupation.

He later became employed in a circus and for several years he

ceased to have an attack of asthma; the dust and small particles of sawdust emanating from within a circus tent, and the odor of animals seemed to have no effect on the sensitive nerve endings in the respiratory tract. The patient began to recognize the fact that the inhalation of flour dust was his special idiosyncrasy in causing an outbreak of asthma and he would keep away from flour laden atmosphere as much as possible. He had a cough of eight years' duration, causing him considerable annoyance at times, and for which he sought relief. It was only on close quizzing, however, that it was learned that he had been a sufferer from asthmatic attacks, he, himself, attributing the cause to the inhalation of flour dust while at work in the bakery.

He gives the following history:

R. H.—Age, 27. White.

Family History—Mother died of pulmonary tuberculosis; father living and in good health, being also susceptible to asthmatic attacks when exposed to flour laden atmosphere, having been previously in bakery business.

Previous History—Had measles, mumps and whooping cough when a child. Negative for venereal infection of any kind. Over-indulgence in alcohol and tobacco.

Present Illness—Chronic cough eight years duration, expectoration freely of a mucopurulent material but never streaked with blood. No loss of weight, no fever or night sweats.

Physical Examination—Heart normal. Lungs—chest—on inspection movements limited and a condition of general emphysema. **Palpation**—decreased vocal fremitus on both sides anteriorly. **Percussion**—Note clear and hyperresonant all over. **Auscultation**—Expiration prolonged and wheezy; signs of chronic bronchitis with few sibilant and sonorous rales. Liver not palpable; spleen not palpable. Sputum collected at numerous different times was negative for tubercle bacilli. Blood examination showed negative Wassermann reaction. Differential count on five hundred cells was as follows:

Small lymphocytes	20%
Large lymphocytes	5%
Polymorpho-neutrophiles	70%
Eosinophiles	1%
Transitional cells	4%

The total white cells count 6,944.

Urine examination: Reaction acid, specific gravity 1.024, and showed nothing of note.

Radiograph of chest showed no enlarged bronchial glands.

Examination of nose and throat did not reveal any abnormal condition, with the exception of a slight hyperemia of the nasal mucous membrane, there was a slight naso pharyngitis present, otherwise

normal. He was of a nervous temperament, and a neurological examination showed markedly exaggerated patella reflexes and a spurious ankle clonus, spurious because it was not like the true ankle clonus found in organic disease. Other neurological signs, negative. The reflexes spoken of above were not regarded as indicative of any organic disease of the brain or spinal cord but that such conditions are usually seen in patients of this neurotic type and habits.

In order to verify that the inhalation of flour dust was the causative factor of asthmatic attacks in this individual some flour was procured with the patient's consent and I then proceeded to dust it around him until the air he breathed contained a quantity of the dust; he at once began to have an asthmatic attack not unlike one seen in true bronchial asthma, lasting, however, only for a short length of time.

This particular case bears a striking resemblance to hay fever in some circumstances, in that both are due to the peculiar action of a specific irritant:

Hay Fever—By the action of the pollen of certain grasses and plants, and in this case by the action of flour dust upon the hypersensitive mucus membrane. However, the irritant of hay fever had no effect whatever in this individual, while on the other hand that of flour was a striking factor in the production of an asthmatic attack, the patient himself being aware of the fact that the odor of plants, animals or other odors would not precipitate a paroxysm of asthma. These attacks were never attended with the initial sneezing as seen in majority of cases of the so called *"autumnal catarrh."* In hay fever it is generally believed that the exciting causes are the emanations from certain plants and animals, chiefly the following:

Graminacæ, Solidago vigaurea (golden rod) — *Ambrosia artemisiæfolia* (rag weed)—cats, dogs, horses and cows.

The emanations from grasses and other plants, which cause the paroxysmal symptoms, are probably their pollens.

Again, hay fever is somewhat seasonal in character in that it occurs most frequently in August and September and less frequently in June, when the roses are in bloom.

To revert, we are dealing here with a definite respiratory irritant, that of flour, which in this case causes an outbreak of asthma; while it may not excite an attack in all cases, it has been found to do so in this case. Flour dust can be regarded, therefore, as an exciting cause in the production of asthmatic attacks.

SYMPOSIUM ON GALL-BLADDER DISEASE.

I.

THE ETIOLOGY AND PATHOLOGY OF GALLSTONES.*

By JNO. A. LANFORD, M. D.,

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By the term gallstones we mean a firm, more or less oval body formed in the gall bladder or some of its ducts and giving rise to clinical symptoms somewhere in the alimentary tract.

These stones are composed for the most part of cholesterin combined in varying proportions with salts of lime, magnesia, bile acids, fatty acids and traces of iron and copper. They may be single, in which instance they are ovoid in shape, and may obtain a relatively large size, stones five inches long being recorded. As a rule, they are multiple, and it is not uncommon to find a hundred or more in a given case, and occasionally the number may be astounding. Otto reported having found 7800 in a single case. These large numbers are of calculi varying in size from a grain of sand to a small shot. When moderately numerous they show signs of mutual pressure, with polygonal forms having many facets. Occasionally several stones of relatively large size may be in the bladder without showing any facets. Gallstones are of different colors, the lighter ones of a yellowish tint, being composed largely of cholesterin in crystalline or amorphous form, while the dark ones are largely made up of bile pigment. On section the calculus shows a nucleus made up of bile pigment, desquamated epithelium, bacteria or debris of some character, and an outer layer of cholesterin or bile pigment arranged in a concentric or radiating form.

Etiology: In olden days it was the belief that gallstones were due to a coagulation of the bile, induced by increase of heat in the liver, and it is only in recent years that this subject has been cleared up. The first step in this direction was by Naunyn, who showed that the two chief constituents of gallstones, cholesterin and bilirubin, were in a large part the product of the mucosa of the gall bladder; that these salts were formed as the result of certain alteration in the mucosa causing an exfoliation of the epithelium and an increased pouring out of mucus from the glands. The next discovery was that of

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Welch who, in 1890, demonstrated the presence of micro-organisms in the centers of the stones. With these facts in mind, many workers studied the problem, and in 1897, Gilbert and Fournier successfully accomplished the experimental production of gallstones by injecting microorganisms into the gall bladder of animals. They used an attenuated culture, preferably one which had been grown in a medium of diluted bile for several weeks, as virulent organisms produced an acute cholecystitis and the mucosa being so damaged by inflammation and ulceration that over-productions of cholesterin were entirely prevented. The organisms reported by Miquot as capable of giving rise to gallstones are *B. coli, B. typhosus, Staphylococcus, Streptococcus,* and *B. subtilis.*

While it is without doubt that a low grade of inflammation induced by microorganisms and resulting in a "lithogenous catarrh" is the most important single factor in the production of gallstones, there are other very important accessory factors. Chief among these is anything which will produce stasis or retention of the bile in the gall bladder, as it has been proven that if the bile can escape freely from the gall bladder any organism injected quickly finds an exit. Among the more common causes of stasis may be mentioned corset-wearing, enteroptosis, nephroptosis, pregnancy, and occupations requiring a leaning posture. Lack of exercise, sedentary occupations and constipation are also important factors.

Foreign bodies have been shown to be the nucleus of gallstones, but it is necessary that the substance be fixed and associated with a low grade of inflammation before any deposit of cholesterin takes place.

Since 50% of cases occur in persons over 40 years old and 75% in women, age and sex seem to be predisposing factors. Naunyn reports that 90% of cases found in women were in those who had been pregnant.

The gallstones found in new born infants, and which are necessarily formed during intra-uterine life, are not of bacterial origin, and are most probably not true stones but masses of inspissated bile. In old people gallstones are frequently found at autopsy, they not having given rise to any pain or symptoms during life, and it is possible that their origin is not due to a low-grade infection, as Becquerel has observed that the blood

of old people contains a larger percent of cholesterin, which is poured out in larger quantities through the mucosa of the gall bladder, probably resulting in the formation of stones. This fact would suggest that gallstones in the aged are caused by a similar process which results in atheroma of the vessel.

Since bacteria are such important etiological factors in the production of gallstones it might be interesting to consider their routes of entrance into the bile passages. There are two chief ways—first, by way of the common duct from the duodenum; and second, by way of the blood current, chiefly from the portal vein. The first is probably the more frequent. While the *B. coli* are common inhabitants of the alimentary tract and are relatively in small numbers in the duodenum, they are normally present in the ampulla of Vater; however, they do not extend up into the gall bladder unless stagnation be present, as Sherington has shown that no bacteria can enter the bile ducts so long as the bile remains and is expelled at regular intervals.

The question of the infected organism gaining entrance to the portal vein has been the subject of much experimental work with divergent results. Adami, however, writing on this subject, said that:

"we may assume (1) that colon bacilli in small numbers are in the healthy individual constantly finding their way into the finer branches of the portal circulation and (2) that one of the functions of the liver is to arrest the further passage of these bacilli into the general circulation and to destroy them thru the agency of the specific cells of the organ. Then, if the action of the liver cells has been disabled by the toxic products of the bacteria these may reach the bile and spread through the gall bladder and ducts."

In recent years it has been the experience of many surgeons to find that many cases of chronic appendicitis are associated with gallstones, and it is very probable that this focus of infection has more or less constantly thrown off bacteria into the portal circulation, some of which have found entrance into the gall bladder and setting up a low grade of inflammation in the mucosa has resulted in the formation of calculi. This possibility becomes more rational when we recall that most cases of chronic appendicitis are associated with constipation, which in its turn results in more or less stagnation of the bile in the gall passages.

In concluding a consideration of the etiology of gallstones it might be well to repeat that two essentials are needed: (1) A low grade infection of the gall bladder and its passages, and (2) obstructions to the free exit of the bile from the ducts.

Pathology: While gallstones are a pathological condition resulting from several processes named, they may occur without causing any evidence of their presence, post-mortem examinations having shown that ten percent of all bodies examined had calculi in some part of the bile passage; however, they frequently produce grave and serious pathological conditions of great diversity. Among the more frequent conditions is:

Cholecystitis: The presence of calculi acting as an irritant tends to cause inflammatory changes in all the coats of the gall bladder; the mucosa becomes thickened and frequently mottled, showing here and there small black spots which, on microscopic examination, are found to be made up of cholesterin and bile salts. In parts it has shed its epithelium and patches of ulceration are to be seen; the muscular layer at first becomes thickened but is later replaced by new connective tissue varying greatly in thickness. This connective tissue extends into the mucosa with, at the same time, an atrophy of the glands, resulting in the lining of the gall bladder becoming almost perfectly smooth; later there is none of the normal structure remaining, the sac being made up of fibrous connective tissue which finally contracts, resulting in small sclerotic sacs. Early in the disease there is some edema and congestion with increase of the secretion of the mucosa. If the infection is severe the inflammatory conditions extend through the serous coat, resulting in a peri-cholecystitis with formation of adhesions between the gall bladder and the adjacent structures. Occasionally the contraction of the new bands of connective tissue will result in the formation of diverticula in which the gall stones are located. In the more acute forms of inflammation patches of gangrene may result with rupture in the peritoneal cavity, and an extension of the inflammatory processes. This acute inflammatory process usually involves the gall passages, and as it subsides results in the narrowing of the lumina producing more or less stasis of the bile. Another frequent pathological change is

Obstruction: Quite frequently the stones in attempting to pass through some portion of the duct produce more or less obstruction of the lumen, resulting in retention of bile. This obstruction may occur in the cystic duct or the common duct, and is usually associated with a definite train of symptoms. This obstruction within the cystic ducts results in dilatation of the gall bladder (Hydrops vesicæ felleæ). In acute obstructions of the cystic duct the contents are mixed with bile and mucus, or muco-purulent material, the obstruction resulting in an exacerbation of the inflammatory process producing acute cholecystitis with rupture, or there is a subsidence of inflammation and the condition becomes chronic. In chronic obstructions the bile is replaced by clear fluid. This fact is well to be kept in mind as the distention may become enormous and be mistaken for a cyst of some other organ. Lawson Tait reports a case which he mistook for a paro-ovarian cyst, and an operation found that it was a distended gall bladder containing 11 pints of a clear gluey fluid. Jaundice is usually absent in the chronic cases.

In obstruction of the common duct jaundice is extreme, the branches of the hepatic duct being much distended and resulting in enlargement of the liver. This obstruction is frequently followed by an infectious and suppurative process.

Among the more remote effects of gallstones may be mentioned Biliary Fistulæ and Intestinal Obstruction.

Biliary Fistulae: These are not unusual. There may be a communication between the gall bladder and hepatic duct or the gall bladder and a cavity in the liver itself; more rarely perforation of the common duct into the portal vein occurs. Perforation into the peritoneal cavity may occur. Fistulous communications between the bile passages and the gastro-intestinal canal are rather frequent, the most usual form being into the duodenum; the stomach, ileum and jejunum are more rarely involved. These communications may occur without producing any definite symptoms, they resulting from pressure atrophy of the bile passage and intestinal wall which are bound together by adhesions, so that no escape of the bile into the peritoneal cavity occurs. Occasionally the urinary passages may be opened and the stones found in the bladder (urinary). A more frequent fistulous opening is into the lung, there being

ten or more cases recorded. This results in the expectoration of bile in more or less large quantities. The most common fistulous communication is the external or cutaneous. Most of these occur in the right hypochondrium, although a large number are found in the region of the navel.

Intestinal Obstruction is not a very common occurrence but a fair number of cases is recorded. The most frequent location for this obstruction is in the ileum where a single or many small stones may completely close the lumen.

Malignancy: When we recall that a long standing irritating process is claimed by some authorities as a cause of malignant change, and that gallstones are found in the majority of cases of primary carcinoma of the gall bladder, malignancy might be considered as one of the remote pathological processes of gallstone.

In conclusion, the pathology of gallstones may be divided into two divisions: (1) The aseptic, mechanical accidents in consequence of migration of stone or of obstruction either in the ducts or the intestines, and (2) the septic infectious accidents, either local or general, the biliary fever, and the establishment of fistulae.

II.
DIAGNOSIS OF GALL-BLADDER DISEASE.*

By J. B. ELLIOTT, JR., M. D.,

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There are two points to bear in mind in opening a discussion on the Diagnosis of Gallstones:

1st: That it has been proven by Kehr and others that only five percent of those harboring gallstones present symptoms of their presence;

2nd: That the only positive diagnosis of gallstone disease is the finding of the gallstones in the feces, or by operation.

In order to bring the diagnosis of gallstones before you more concretely, I reviewed the histories of all those operated upon for this condition in the Charity Hospital during the years 1912-1913. Of the twenty-four cases occurring during these two years, there were seventeen females and seven males. The

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average age was 41 years plus. Fifteen, or 62% plus, gave history of jaundice. The average duration of illness from first symptom to time of operation was 3.3 years. Only six cases gave histories of sudden onset, while ten declared that symptoms at first were very mild. Only six cases gave a *positive* history of preceding typhoid fever. Ninety percent of the cases had some fever during the attacks or before operation.

From a study of these twenty-four cases, we can draw the following picture of a typical case of gallstones. Patient, after years of dyspepsia, will be seized with a sudden attack of intense cramp-like or colicky pain in the region of the gall bladder, this pain extending through to the back, being especially violent between the eleventh and twelfth rib. Patient will often vomit or at least be nauseated. In a vast majority of cases there will be a slight icteric hue to the eye; the urine will generally be highly colored, and in some cases we may find clay-colored stools, this only when the common duct is involved. Many of these cases complain of gas pressure in the region of the stomach. We also have, immediately after the pain is relieved, a little rise of temperature, from ninety-nine and one-half to one hundred degrees, this being due to the accompanying inflammation of the duct or gall bladder; in increase of leucocytes is generally present. On the second day there will be present much soreness in the region of the gall bladder, while during the attack the rectus muscle is rigid, this rigidity lasting until the underlying inflammation has subsided.

Let me give you a typical case:

Mrs. W., age 59, mother of one child; lived in the country all her life; had indigestion for the past fifteen years, always coming on after meals and almost daily. This caused no loss of flesh and no vomiting. Seven years ago commenced to have colicky pains in the region of the stomach, which would come on suddenly and generally during the night. For the past three or four years had it only three or four times a year. During the last two years attacks were much more frequent, almost one a month. With the intense pains there was always vomiting and highly colored urine, and intense soreness in the region of the gall bladder. Temperature would rise to 100° 100½° with each attack. Sclera would be slightly tinged with yellow following each attack. This I take to be a pretty clear case of gallstones but a diagnosis could not be positively made until the stones were taken out.

I wish now to review briefly differential diagnostic points between gallstone and other diseases of the gall bladder and adjacent organs. One of the most common mistakes in medicine is the confounding of gallstones and hyperacidity, or rather hyperchloridia. In my own experience, acute indigestion, giving intense pain without vomiting and purging is a rare condition and generally means gallstones. The patient will tell you that he has had indigestion for years; that it is getting more frequent and that it has little or no connection with food eaten, and that it is paroxysmal in character. This to me negatives gastralgia entirely. It means gallstones.

I wish to cite here a case which I saw on the 31st day of March, giving the following history:

A man aged 24 years, foreman on a railroad, came to me complaining that for the past three years he had been having attacks of pain in the belly; that he had never vomited; that the pain would spread all over his whole body, giving him cramps in the muscles of the legs and arms; that the cramps would last about forty minutes; that he would always feel better if he could vomit; that after the last attack there was some soreness over the whole abdomen; that he has lost twenty-five or thirty pounds in the last year but that he could always trace his attack to over-indulgence in food or alcohol. His physician told me that he had never been jaundiced in any attack nor had he had any fever in these attacks. Examination showed normal heart except for a little extra systole; B. P. normal; liver normal as to size; no jaundice; had never had typhoid fever; a stomach examination made after the regulation test breakfast showed a free H Cl of 80, with a total acidity of 90, and the patient has been relieved of the attacks entirely by a careful dieting and the use of enormous doses of bicarbonate of soda. I believe such cases, however, to be rare and in any event if such a case did not respond to treatment rapidly would certainly advise exploratory laparotomy.

The differentiation between cholecystitis and gallstones is practically impossible in the majority of cases, and is unnecessary, as both conditions, if chronic, require the same treatment.

Cholecystitis, chronic in character, as we all know, may give no pain whatsoever, but does give intermittent fevers with or without increased leucocyte count. I should like here to cite a case seen only in the last two weeks bearing on this subject:

Mrs. A., aged 60, mother of three children, who has been healthy all her life up to a year ago. Since that time has been having fevers at irregular intervals, fever rarely lasting longer than two weeks at a time and only in the past month has she had any nausea with her

febrile attacks; never any colicky pains but only a feeling of fullness in the region of the stomach and rigid rectus muscle during and after an attack of fever. Her blood count was normal both as regards white cells and differential count. Hemaglobin 75% and she had lost twenty pounds in the past eighteen months. Urine was normal in every respect. After the last febrile attack had subsided, a mass could be felt in the region of the pylorus which made me fear malignancy or syphilis of the liver, yet the high febrile attacks could not be accounted for with either of these diagnoses. I therefore diagnosed cholecystitis and advised drainage. An opening was made by Dr. Maes under local anesthesia, and we found a gall bladder containing seven ounces of bile, rather thick in character but not purulent; also two enormous gall stones, the size of a hickory nut. This case exemplifies the difficulty in making a positive diagnosis without an exploratory laparotomy.

The differentiation between duodenal or gastric ulcer and gallstones is at times most difficult, and we have to depend here largely on the fact that in ulcer we have pain almost daily and always have high acidity of the stomach contents and occult blood in the stools, but the pains are never cramp-like in character, and jaundice is rarely ever present. The X-ray is often of great value in this differentiation.

A stone in the right kidney may simulate at times gallstone disease, but a thorough and careful examination of the urine with catheterization of the ureter will clear up this point at once. A Dietl's crisis of the right ureter may cause confusion judging purely from the history, but the absence of fever, jaundice or tender liver would help to rule out the gall bladder.

Appendicitis sometimes gives trouble, and I know of a case that occurred in the city recently where the patient had intense colicky pain in the region of the gall bladder with jaundice. An operation which had been advised showed the gall bladder to be normal, no stone present, but the appendix adherent to the gall bladder and inflammation of the organ.

I have seen only recently a case of what I took to be lead colic which presented many symptoms of gallstones. Stippling of the red cells with a history of exposure to lead infection probably saved the patient from an operation, and he is clearing up nicely now under magnesia and potash.

The gastric crisis of locomotor ataxia has been operated on more than once for gallstones. There is a case at present in Ward 21 of the Charity Hospital which has been saved from

the knife twice in the last three years. The attacks simulated exactly gallstone colic. The absence of jaundice, fever and tenderness along the lower edge of the liver and bile colored urine, with the presence of the loss of patella reflex and Romberg sign clinched the diagnosis.

Although it may seem farfetched, I have seen a case of adherent pericardium accompanied by Angina Pectoris giving symptoms almost identical with gallstone colic, and one case in which the two were combined.

In conclusion, I want to emphasize again the importance of not calling gallstones colic gastralgia, as this latter condition, in my mind, is very rare, and it is especially rare in persons past 40 years of age.

III.

TREATMENT OF GALLSTONE.*

By OTTO LERCH, Ph. D., M. D.,

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The first question that arises when a diagnosis of gallstones has been made is whether an operation is necessary, and whether that has to be immediately done to protect the patient.

The views on this subject differ widely between internist and surgeon, and even amongst the latter are largely at variance.

Some advise in all cases of biliary calculi an immediate operation, allowing only a small percentage to be treated by medical methods; others advise, and this seems to be the majority, that only a small percentage of gallstone patients should be operated.

Kehr operated only on 1,300 of 4,000 patients that consulted him for gallstones, and comes to the conclusion that only 20 percent of patients suffering from gallstone diseases ought to be operated and with others is a decided opponent of an early operation during the first attack.

The following table, published by this author in 1909, is of great interest:

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	Pure Stone cases.	Benign simple cases.
Surg. clinic of Heidelburg	15.0	
Death rate 1904-1909	4 %	11.3%
Mayo Brothers		
in 845 cystotomies	2.3 %	
in 319 ectomies	3.43%	
Koerte 327 simple cholelithiasis		
238 pus and choledochus stone		
21 with simple complications	10 %	
Borelius 50 estomies	0 %	
Surg. clinic University of Giessen		
513 pure stone cases	9 %	
46 with simple complications	8.69%	
Kocher,		
103 pure stone cases	2.0 %	
Kuemmel,		
169 pure stone cases	4.7 %	
14 with simple complications	14.3 %	
Kehr,		
238 pure stone cases	2.9 %	
73 with simple complications	20 %	

The Mayo brothers, in 207 operations involving the common duct, had the following death rate:

In 105 cases, without pressing symptoms.....2.9%
In 61, with fever, chills and jaundice..... 16%
In complete occlusion of choledochus..... 34%

Recidive colics due to stones or adhesions have been reported by a number of observers.

In 1911 the Mayo brothers published 4,000 operations for cholelithiasis, with a mortality of 2.75%. In 2,920 operations the disease was confined to bladder and cystic duct—mortality, 1.8%; in 2,165 of cystotomy, mortality 2.4%; and in 492 operations involving the common duct, mortality 8%. In operations during quiescent state, 3%; with jaundice, 10%; and with complete obstructive jaundice, 25%.

Dr. Fossier, who has collected the cases from the Charity Hospital for me from 1906 to 1914, found:

In 96 operations for cholelithisasis, mortality 21.5%. In 58 cases treated medically during the same time, mortality none.

Lehnhartz in his article on the treatment of the diseases of gall bladder and ducts, in which he also discusses the indications for an operation, quotes statistics of the Eppendorfer Hospital, and finds that from 109,700 patients treated from 1902 to 1908, only 515 suffered from liver or gallstone diseases, exclusive of cirrhosis, and that of 1,800 autopsies, death was due only 6.7% to gallstones and of this in 72 or 0.4% to carcinoma of the gallbladder.

From his practice, he reports 10-12 deaths caused by diseases of liver and gallstones from 10-13000 patients, many of these had

passed through the surgical ward. Cause of death, cholangitis and cholecystitis and septic pylephlebitis. He saw most severe cases with chills and high fever often get well, even with colon bacilli in the blood, if not operated.

Cohnheim advises not to operate till all medical treatment has failed.

I believe it is advisable to call a consulting surgeon early not to miss the time when an operation may become necessary.

If a stone lodges in the cystic duct causing colics and swelling of the gallbladder, it is in the experience of every physician that such stones usually pass under treatment, leaving the patient in perfect health during the remainder of his life; an early operation in this case has not been adopted generally. In repeated attacks with renewed inflammation of the gallbladder, physician and surgeon have to decide whether an operation is advisable. The prognosis is better if the patient is operated between attacks free of fever and with reduced inflammation. In cases with severe general infection, repeated attacks with chills and fever, especially when chronic inflammation has produced a shrunken gallbladder, an operation is indicated, unless disease of the heart or a weak heart and a severe condition contraindicates the operation.

If a stone closes the common bile duct, it is better to wait, unless the duration of the trouble, the general condition, and the wish of the patient, call for an earlier operation. Jaundice makes the prognosis more grave.

The treatment of the biliary colic is clearly indicated. Pain has to be stopped, the expulsion of the stone favored, inflammation subdued, and the strength of the patient supported. Morphin is a supreme remedy to stop pain and may be given in combination with atropin or alone.

The muscular spasm is relaxed, bile can flow again and pushing the stone onward, prevents injury and necrosis due to pressure until the effect wears off and a new injection has to be given. The treatment has to be repeated until the stone has passed into the duodenum.

Opium and belladonna suppositories occasionally stop pain. Pyramidon, antipyrin and other coal tar preparations are useful in minor attacks, and the salicylates in large doses give occasionally satisfactory results. The physiologic measures of treat-

ment are all of the greatest importance. Rest, mental and physical, heat in some form, and if bath is not well borne, then ice bath. Electricity and massage if the physician is thoroughly familiar with the method. Unskilled hands may do great harm and cause rupture of the gallbladder.

The patient has to be carefully watched, and especially the aged need analeptica, like coffee, tea or alcohol in some form.

The treatment of gallstone disease is indicated by its etiology, pathology and course. The presence of an inherited predisposition and that it is only exceptionally found in childhood, rarely in the young, that it becomes more frequent with advancing years and its great predominance in women, allow of but one explanation, "a poor abdominal circulation." The inherited predisposition in enteroptosis with its pendulous abdomen and relaxed abdominal walls or rigid recti and diastasis, the greater frequency increasing with years, is due to the adoption of an indoor life and late hours, with usually a more generous diet to burden the circulation. The greater frequency in women is due to an indoor life, as well as to the relaxation of the abdominal muscles after childbirth and to lacing, which interferes with diaphragmatic breathing.

Pure and free flowing bile prevents the formation of stones and dissolves them after they have been formed; this is the only solvent of biliary calculi so far found.

Frerichs and other found calculi small and crumbling after treatment; I can confirm this observation. Naunyn has shown that calculi inserted into the gallbladder of dogs are dissolved within two months. A pure, free flowing bile is only possible when the abdominal circulation is in good condition, and our therapeutic measures must be directed to produce it. A bandage is necessary in almost every case to narrow the abdominal cavity and give counter pressure to diaphragmatic breathing. It is a substitute for muscles. I have described to this Society before a bandage designed by me for this purpose.

Exercise improves the general circulation, and as a part of it the abdominal circulation. Out of door, as well as room exercises, are useful, and the latter must be directed to press upon the abdomen and selected to favor the respiration. Rest is of importance to ease the heart and prevent congestion of the abdominal organs.

Heat, as by full warm bath, sitz bath, etc., to relieve pain, influences the circulation and reduces inflammation; electricity and massage are used for the same purpose.

Diet is of importance to save the liver parenchyma from further injury, and the literature on this subject is extensive. Some advise a vegetable and others a meat diet, and others again a mixed diet. A moderate amount of albumin and fat with a larger quantity of carbohydrates, preferably in the form of the tender green vegetables and fruit juices, is the best combination to save the liver.

If the pancreas is seriously involved, it is difficult to nourish the patient, and additions of carbohydrates, albumin and fat must be excluded or greatly diminished, as one or the other of the digestive functions fail. Pancreatin and similar preparations may be given as a substitute of the lacking secretion.

In prescribing a diet in this as in any other disease, it is of the greatest importance to consider the present state of nutrition of the patient, the assimilating power, the age, the occupation, the climate and the season. These are points rarely taken into proper consideration. It is usually the nutritive value that is considered most—often with exclusion of all others.

A combination of the physiologic methods with drug treatment is indicated in every case in which the disease is well established. It was formerly thought that certain drugs dissolve stones. This view has been entirely abandoned; nothing but a pure alkaline free flowing bile will accomplish this. Durand's remedy, a combination of turpentine and ether, is no more, and it is disagreeable to take, and we possess antispasmodics and cholagogues far superior to this formerly highly prized remedy.

Olive oil has become quite a popular remedy in this country as well as in Europe. It is given during the acute attacks, as well as in chronic cases.

Calomel is another remedy freely used in affections of the liver and gallbladder. It increases secretion and peristalsis; a larger quantity of bile is found in the dejections after calomel has been administered. I have often observed that liver and gallbladder shrink considerably after its use, and dilated hearts become smaller and the pulse firmer and fuller, high tension lowered. This influence upon the circulation is of great importance when the object is to produce a pure liquid bile.

A number of remedies are used to increase biliary secretion, of which at present the bile salts are in great favor. It has been proven on animals and men that they increase the fluidity and quantity of bile. Sodium salicylate has been long known as an efficient cholagogue and the modern preparations like aspirin, displosal, etc., have the same effect; they are better borne by the stomach, cause less disagreeable systemic symptoms than the salicylate. Podophylin acts as a cathartic and relieves congestion and torpidity of the liver. Sanguinarine increases the flow of bile and the digestive glands in general. Julgland-in, baptisia, hydrastin and various other alkaloids are all freely used for the same purpose with advantage. Ammonium muriate stimulates the secretion of all the mucous membranes of the body and is an excellent remedy in torpor of the liver and chronic hepatitis. It must be given in large doses to be effective.

Chologen is a combination of various drugs, among them calomel and podophyllin in minute quantities. It has acquired a great reputation. It has to be given from six to eight weeks. The treatment of gallstone and liver disease with the mineral waters has stood the test of centuriees.

There can be no question that the change from a sedentary, indoor life, with the worry and care attached to the daily occupation, to a life in the open, free of care and worry, full of hope to regain health, with regular hours and a suitable diet prescribed by a skilled physician, had much to do with these cures. Notwithstanding, the waters have therapeutic properties.

They represent an alkaline solution, which, given warm or hot, one hour before each meal, bathes the mucous membrane of stomach and intestines, frees them from mucus, stimulates peristalsis and subdues inflammation. During their passage through the gastro-intestinal tract, some of the mineral water is absorbed and increases the fluidity, quantity and alkalinity of bile. It seems to be rational that a blood richer in water and alkaloids produces such changes, though experiments have not shown a direct influence upon bile formation.

The discovery that many of the famous mineral springs are radioactive and that this is due to emanations of radium adds a new factor to explain the efficiency of these waters in disease.

When symptoms of a disease make their appearance, every organ of the body is more or less affected, and it is irrational to try to cure the patient by treating one organ or a disease. All organs make blood, or distribute it, that is, they add to or subtract something from the blood to make it perfect, so that each cell of the body finds its proper food. When one fails, all fail. In order to function well, each organ must get a sufficient supply of pure blood, and this only is possible when blood distribution is perfect. *"Blood purity depends on blood distribution."* The gastro-intestinal tract is outside of the body proper, and its cleanliness has to be looked after, or even more so, than the cleansing of the skin. The treatment of gallstone disease does not differ in this respect from the treatment of any other disease. To treat gallstone disease we have to influence the general circulation, and especially the abdominal circulation, to cure inflammation and to produce a free flowing alkaline bile to expel stones, make them quiescent, or to dissolve them, with all therapeutic measures and means at our disposal, not with one drug or one method.

Medical treatment restores the patient to normal or as much so as that can be done. Surgery removes diseased tissue and must be preceded, combined and followed by medical treatment to be of the greatest permanent benefit to the patient.

IV.

SURGICAL TREATMENT OF GALL-BLADDER DISEASES.*

By F. W. PARHAM, M. D.,

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There has been so much written and well written on this subject of late years, that little can be said that might not be considered trite. The affections of the biliary apparatus are, however, of the greatest interest to physician and surgeon alike, and many problems yet remain unsolved. The time is too short and the weather too hot to go into anything like an exhaustive discussion of the many phases of the subject, but I should like to make a few brief remarks under the following heads:

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1. **The indications for operation, and**
2. **The character of the surgical intervention demanded.**

Few internists or surgeons would hesitate to advise operation in cases with the clear-cut, classic symptoms of biliary infection. No longer is jaundice considered necessary to justify surgical intervention; while confirmatory, it is not even essential for a diagnosis of biliary obstruction. We all admit that serious biliary disturbance may exist without it, calling for prompt and radical interference. The clinical history, however, of repeated attacks of epigastric pains with gastric disturbance is often sufficient to point unerringly to the gall apparatus as the source of the trouble; there is no longer room for doubt when the case is seen during an attack and the palpatory tests of Murphy and others are tried. The diagnosis being then easily established, the case is at once removed from the province of the internist and should be turned over to the surgeon. But in the second category of cases the symptoms are vague and the diagnosis most difficult, yet in these very cases the interference with health is often marked and the disability very great. These are the cases that deserve our most careful consideration and offer opportunity for the display of most diagnostic acumen. These cases demand just as insistently the relief which the classic cases get, but this relief is often delayed because of the more difficult interpretation of symptoms. These are the borderline cases where controversy still rages as to whether they are medical or surgical cases. In many the doubt may only be resolved by a surgical exploration.

Symptoms formerly regarded as necessary for a diagnosis are now regarded as terminal. While the classic cases should be operated on and operated promptly, precious time has often already been lost, the patient has been allowed to suffer unnecessarily for perhaps years, and the surgeon at operation finds himself in the presence of the later pathology, marking irreparable tissue destruction.

These cases were just as much surgical cases at first, but were allowed to drift along from week to week, month to month, and even year to year, with health continuously undermining, simply because the early or inaugural symptoms were not given their proper significance. "Not a few have been treated by many hands, test-mealed, lavaged, dieted, alkalined, given seda-

tives, rest cured, and not a few have had their appendices taken out. They float around from one to another, from one clinic and hospital to another, from one stomach specialist to another, and even from one surgeon to another, the symptoms persisting all along the line, and yet as a class they are not difficult to diagnose."[1] Why is it, then, that we are so "pitifully helpless" in such cases? Moynihan says: "It is, I venture to say confidently, because we rely for our diagnosis not upon inaugural symptoms, but upon those of late appearance; we confuse far too frequently the symptoms of a tardy complication with those of the original morbid process itself. * * * We dare not, for example, hint the presence of gallstones till jaundice comes, though symptoms of the plainest meaning have been present for years, and in spite of the fact that jaundice is an infrequent symptom of gallstone disease.[2] I wish to say right here that great improvement in this respect has been apparent in recent years. Indeed, I venture to say that in the matter of diagnosis the internist has far outstripped the surgeon, whose hand is often quickened by the judicious but not vacillating advice of his more painstaking medical confrere. But there is yet much advance to be made in the diagnosis of such cases as those of which I now speak, and there is need of closer association and better co-operation between the internist and the operating surgeon. There is apparent now greater consideration for the clinical history and a search after the early pathology. How one is struck by the apparent cock-sureness of Murphy, as manifested in those wonderful clinics of his. And yet the very simplicity of his diagnostic methods, so sane and yet so sure, excites still more our admiration, because his conclusions are so well grounded in correct pathology, aided by a remarkable medical perspective. He lays the greatest stress upon the anamnesis, whose analysis generally brings him to an incontrovertible conclusion. Two of the most readable and instructive essays of that prince of surgical writers, Moynihan, are those upon the "Pathology of the Living" and the "Inaugural Symptoms of Disease." In these he has developed more clearly his plea for the early diagnosis of disease. In none is its necessity more apparent than in the diseases of the upper half of the abdomen.

"The very great majority of medical writers, when dealing with the topic, "indigestion" or "dyspepsia," assert that in a

large proportion of such cases the symptom owes its origin to "functional" causes, and that it is not dependent upon any structural change in the abdominal organs. Again, it is said, when the question of cholelithiasis is considered, that only a very small number of those patients who carry stones in the gall-bladder suffer from troubles caused thereby. No one seems to have correlated the two statements or to have shown how the error in one is explained by the error in the other. The truth is that a very large number of patients—probably, indeed, a large majority—who have suffered for years from "gastric" disorders have no organic disease in the organ impugned, but have a real structural disease in other parts, notably the gall-bladder or the appendix. Nothing is more remarkable in connection with the surgical investigation of dyspepsia than the broadening of the organic bases upon which the clinical symptoms are found to be built. It is the stomach whose sensibilities are tender that cries out the warning when other organs are suffering attack."

He gives[3] a graphic description of the inaugural symptoms of cholelithiasis and says: "Such are the symptoms which may be present for months or even for years before a sudden and dramatic attack of acute pain, perhaps amounting to agony, occurs, as a result of the disarrangement of the stones, or of the attempt on the part of one stone to escape from the gall-bladder." The "harmless" gallstones are now making their presence unmistakable. But have they ever been harmless? In a paper entitled "Innocent Gallstones a Myth," W. G. Mayo says:

"Ten years ago we heard a great deal about 'innocent' gall-stones, which meant that gall-stones existed without symptoms and that their presence was not suspected until post-mortem examination brought them to light. We cannot now escape the conviction that the gall-stones did cause symptoms and that we, as diagnosticians, and not the gall-stones, were 'innocent'."

"When the presence of stones in the gall-bladder has been recognized, what is the treatment to be adopted? There is, of course, no medical treatment of gall-stones. Nothing that can be wrought by drugs will have any effect in dissolving stones."

All that can be done by medical treatment is to render the gallstones latent. Mayer believed that we could do this for years if we could prevent bile stagnation and infection. But this was the task of Sisyphus. Certain it is that most gall-

bladders, however symptomatically latent, suffer more or less pathologically, as shown by post-mortem examination. Moynihan remarks::

"I hold that when once a diagnosis of gall-stones has been made operation is always indicated, unless there are grave reasons forbidding resort to surgery. Reasons should not be asked to support a plea for operation, but to justify any other course than this."

This is the position surgeons assume, and this is the attitude the internist should adopt. There is demand or co-operation which is highly desirable in the interest, at least, of the patient.

Having made the diagnosis and decided upon operation, the question then is as to what procedure shall be adopted. I shall not run the risk of trying your patience further by speaking of the numerous incisions that have been recommended. Suffice it to say that any good incision, such as the straight incision, or the modifications, known as the Mayo-Robson, or the Bevan incision, calculated to give light and room for manipulation will do. Nor shall I, for lack of time, state the various conditions calling for cholecystostomy or cholecystectomy. The views of surgeons vary greatly. The statement of Moynihan may well be quoted:

"When, however, all the exceptions are considered, it may still be accepted as the readiest rule to remember at the moment of operation that a gall-bladder whose muscular power is unimpaired, whose cavity has suffered no appreciable diminuation, and whose duct is not obstructed, should be drained, and not removed."

The burden of proof is upon the surgeon to show why the gall-bladder may not be retained. We should alway bear in mind that the gall-bladder, unlike the appendix, is not a useless rudimentary organ, and should be preserved whenever it can be preserved as a useful organ. Moreover, its functional relation to the pancreas should not be forgotten. However, at the Mayo clinic ,where over 4,000 operations on the gall-apparatus have been done, probably 80% of gall-bladders are being now removed, but a reaction is apparent. W. G. Mayo stated to me recently that this was undoubtedly too large a percentage.

"As a matter of fact," he writes, "cholecystectomy is now largely indicated in gall-stone disease, and it may be said that practically all cases of cholecystitis and the large majority of cases of gall-stone disease should be treated by cholecystectomy rather than cholecystostomy."[4]

He has found that:

"chronic pancreatitis, the result of gall-stone disease, is usually cured by the removal of the stones and drainage of the biliary tract, and that in the chronic infections of the gall-bladder with secondary involvement of the pancreas, in the absence of interference with biliary drainage, cholecystectomy furnished a satisfactory symptomatic cure."*

One point I have inadvertently omitted to mention, namely, how are we to determine, with the abdomen open, whether the gall-bladder is pathogenic or not? Palpation and inspection will usually determine, a whitish or greyish gall-bladder that does not readily empty on compression being pathological, but occasionally both these signs mislead. Then palpation with the finger in the foramen of Winslow of the glands along the cystic and common ducts will settle the matter, because these glands drain the lymphatics of the gall-bladder, pancreas and upper part of duodenum.

Permit me to close this plea, inadequate it may be, for surgical intervention in gall-bladder disease with a quotation from the late, lamented Maurice Richardson, as repeated by John G. Clarke in a most valuable report on 160 gallstone cases.[5]

"Shall we wait for pathological changes of serious disease to become so characteristic that diagnosis is unmistakable? Shall the trend of medical and surgical thought be towards accuracy at the expense of safety? Shall the disease come to the surgeon or the surgeon to the disease? Shall the lesion prevail until the surgeon, perforce, strikes a blow, or shall the surgeon assault, overwhelm and destroy the lesion at its very inception? Shall we take that initiative, so important and favorable in matters of war, or shall we rest on the defensive?

"The answer is simple to me. With our utmost endeavor we must make an attack at the earliest possible moment, after we have with reasonable accuracy located the enemy and ascertained his resources."

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*Stanton, of Schenectady, holds that, if the gall-bladder is thoroughly emptied of foreign bodies and drained sufficiently long there would very rarely be recurrence, and the necessity for cholecystectomy would be less frequent.

DISCUSSION.

Dr. I. I. Lemann: I think with most internists that there are unquestioned evidences of gallstones, such as fever, colic and reflex gastric disturbances, that operative treatment is indicated. I do not know of any chemical solvent of gall stones. There is often great difficulty in interpreting the vague and reflex gastric disorders. I recall a case of this sort, a young lady who had dyspepsia, symptoms of hyperacidity, with attacks of pain in epigastrium and attacks of fever, also slight icterus. After six months observation a surgeon was called in and the gall bladder was opened and found to be normal, but the appendix was very long with abnormal contents. Following removal of the appendix relief was obtained. This illustrates the point of contention between the internist and surgeon. As another illustration I may cite the case of a member of my family who had a severe attack of what appeared to be gallstones, but never had any return. Cases like these show the field of medical treatment of gall-stones. The only medical treatment of gall-stones is that directed toward prophylaxis or prevention of infection of the gall bladder. I think these patients should be cautioned against errors of diet such as highly seasoned food, in other words such a diet as would be suggested in hyperclorhydria. I think surgeons are too prone to think that after the mechanical condition is removed the patient is cured. After surgical relief medical treatment is indicated.

Dr. Allan Eustis: This discussion is not complete without a few words on the subject of olive oil.

It is amazing how firmly the average layman and some physicians believe that olive oil will cause the passage of gall stones. This idea is very easily explained by an incident occurring in our clinic last winter. A young man had been having evident gallstone colic and was advised by a friend to drink copiously of olive oil. He brought to the clinic several objects which he had passed by the bowel, and which to the eye were certainly gallstones. They were fairly hard, had indented facets, and measured about ¼ of an inch in diameter. On analysis they consisted of 90% free fatty acid. The olive oil had been broken up by the lipase in the gastro-intestinal tract and in the absence of bile the insoluble palmitic and stearic acid had been molded by the peristaltic action of the intestines into these little balls.

It was with the greatest difficulty that I was able to persuade the patient that they were not gallstones which he had passed, but were the result of the olive oil ingested.

EXPERIMENTAL LIGATION OF THE SPLENIC ARTERIES IN DOGS.*

A PRELIMINARY REPORT.

By S. CHAILLE JAMISON, M. D., New Orleans.

In 1910 W. J. Mayo suggested ligation of the splenic artery, or of some of its branches, as a possible substitute for splenectomy, and stated that experimental ligation in dogs had been successful. He further stated, however, that it was necessary to leave the veins patent in order to avoid necrosis of the spleen; but, that if this were done, atrophy of the organ readily followed.

In December, 1914, I began some experiments along this line. During December and January ten dogs were operated upon. In these experiments the abdomen was opened through a left rectus incision, the spleen delivered, and the pedicle firmly ligated, both the veins and the arteries being included in the ligatures.

Two of these dogs died of shock and hemorrhage within a few hours; four of the dogs lived over one week and less than three; the remaining four lived over four months, in apparent perfect health, and were finally killed in the course of other experiments.

Of the four dogs which lived over a week and less than three, necrosis of the spleen was demonstrated at autopsy in three of them, and in the other, an enormous central abscess of the spleen was found. Cultures of the pus from this abscess failed to show a growth on Lœffler's blood serum or agar, and no organisms could be demonstrated in strained smears.

Of the dogs that survived (four in number), two were laparotomized some four months after the first operation and atrophied spleens removed. Both of these dogs recovered from the second operation without incident. One dog died five months after operation; in this case the spleen was atrophied, and no evidence could be found that its condition had contributed to death; the liver was found infected with coccidia and affected with advanced cirrhosis; Filarial worms were found in the heart; the latter probably produced the dog's death.

*Read before the Orleans Parish Medical Society, July 12, 1915. [Received for Publication August 11, 1915.—Eds.]

It is evident, then, that mere ligation of the splenic pedicle is extremely unsatisfactory, although successful in 50% of the cases, and that it would be entirely unjustifiable to subject a human patient to such a risk.

When, however, the operation was successful the result appeared to me so ideal that I felt justified in expending additional time and trouble in the search for a uniformly successful result.

Two dogs were experimented with late in January. The same steps were followed as above, except that large veins to the spleen were carefully isolated and not included in the ligatures. Both dogs died within ten days, and necrosis of the spleen was demonstrated at autopsy. This convinced me that patency of the veins did not hinder the necrosis.

In looking over the autopsy records and certain specimens that I had preserved from the foregoing experiments, I was impressed by the fact that where the dogs recovered the spleen was absolutely covered by the omentum, but that where the dogs developed necrosis of the spleen the omentum had apparently *failed to envelop it.* It was further observed that in one dog who survived three weeks after operation, the omentum had enveloped over half of the spleen, and that this part of the organ showed atrophy, while that part uncovered by omentum showed necrosis.

In the next experiments the abdomen was opened in the usual manner, and the splenic pedicle ligated, the arteries and veins being included in the ligatures, but the spleen was then *covered by the great omentum,* and the abdomen closed. Up to date five dogs have been treated in this manner and have recovered without incident. It was evident that in the our dogs that recovered from mere ligation of the pedicle, a severe crisis had been passed during the ten days following operation; this was not the case with the last five, who showed no evidence of any trouble more than would follow any simple laparotomy.

In those cases in which the spleen was covered by omentum, the degree of atrophy was greater than that following simple ligation, and came about in a shorter time—about three weeks, as well as could be determined.

These experiments are presented in the hope of helping other experimenters along these lines and to point out a way by which uniform results may be obtained, with the greatest degree of certainty, in putting the spleen out of function. My results, of course, need further confirmation and are not presented with any idea of applying them to the human at the present time.

DISCUSSION.

Dr. Lemann: I wish I were familiar enough with the subject to discuss it intelligently, because I do not think that any paper such as Dr. Jamison has presented to-night should pass without comment or discussion. We have relatively little original work presented to the Society, and when such a piece of work as Dr. Jamison has presented to-night does come before us, it is really a part of the recognition that should come to the author of the paper that he should have some discussion of it.

The problem is an exceedingly practical and important one. It is hard to know just what should be done with these large spleens. The results of splenectomy have not been such as to encourage the doctors to urge their patients to have it done, and if Dr. Jamison's researches hold out any further hope than we have had in the past, they will be of exceedingly great importance to those of us who have seen cases of splenomegalia.

Correspondence

Bureau of the Public Health Service,
Washington, August 6, 1915.

Editors New Orleans Medical and Surgical Journal,
New Orleans, La.

Sirs—Appearing in the August number of the New Orleans Medical and Surgical Journal is an editorial entitled "Drinking Water on Railroad Trains," in which it is stated that "It is gratifying to see the initiative in one important phase directed at a proper water supply, undertaken by the utility itself, without formal procedure directing it," reference being made to efforts instituted by the Queen and Crescent Route to eliminate certain evils connected with the furnishing of drinking water for passengers.

May I invite your attention to the fact, without in any way detracting from the transportation line referred to, that formal procedure directing improvement in water supplies was instituted by this Bureau nearly three years ago, and applies to all lines engaged in interstate traffic.

On January 25, 1913, Amendment No. 6 to the Interstate Quarantine Regulations was promulgated by the Secretary of the Treasury. This amendment provides that water furnished by common carriers on cars, vessels, or vehicles, operated in interstate traffic for the use of passengers, shall be certified by the state or municipal health authority within whose jurisdiction it is obtained as incapable of conveying disease. Under the provisions of this amendment, the sources of water supply of all common carriers in the United States have been listed and semi-annual examinations required. Already over seven thousand such sources have been investigated, the work being performed in co-operation with the state and municipal health authorities, who deserve much credit for its success. Supplementing the order referred to, the Secretary of the Treasury

on October 21, 1914, promulgated a bacteriological standard for drinking water, to which all supplies must conform. The entire plan has resulted in the elimination of many unsafe waters, and while it has not been possible to examine all supplies in the short time the regulation has been in force, the traveling public is now assured that water furnished them for consumption is of proper quality.

The above facts are presented in order that you may understand that the movement for pure water supplies on common carriers is more extensive than your editorial indicates, and is largely the outcome of government action.

Respectfully,

(*Signed*) RUPERT BLUE,
Surgeon General.

N. O. Medical and Surgical Journal

Editorial Department.

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THE MEDICAL BROTHERHOOD.

"May not the medical sciences and medical men become again the standard bearers of morality, especially of international morals?"

This is the very kernel of an appeal to all men and all women engaged in the practice of medicine, urging them to band together to leaven the civilized world—meaning higher morality as it relates to mankind generally.

It is not superogatory at this time for the medical profession to think of its office as a means to a final peace on earth—for

its whole purpose, analyzed to end results, is good will to all men. In times of peace, even amid the unrest occasioned by the political and commercial world activities, the medical profession has chiefly occupied itself in working for a better race. Hygiene and preventive medicine on their present plane have come from the effort of the scientists and field workers among medical men. Disease problems, epidemics and their remedies, the school betterment, are a part only of the division of labor of this group of scientific men and women.

The guild of apothecaries and of pioneer surgeons aimed rather at co-operation in trade; associations of medical men to-day have higher objectives.

It is not, then, unreasonable for medical men and women to band together in a world-wide fraternity with the chief purpose of creating the spirit of tolerance and brotherhood among all mankind.

The idea is thoroughly altruistic and perhaps, just now, visionary, but some dreams come true, and particularly if they are signals of effort to make them realities. At any rate, it can only bring about good in the profession itself to organize for universal morality, and when the honor of the world comes back, and when the mechanism of fearful war shall have exhausted itself, it may be well for the medical profession to show this ready source of solace, comfort and a hand of succor to those who are derelicts of the great struggle.

More than this, the very labor of the men at the front will stimulate the medical men in the remote corners to work for another glory at home, and when the final roll is called perhaps the guild of the *"fraternitas medicorum"* may have earned a place among the elect.

TULANE TEACHERS.

The dismissal, recently, of a professor in the School of Medicine of Tulane by the Board of Administrators of the University has given rise to some discussion among the profession, not only because there is always more than one viewpoint on any question, but especially because of the extensive notice given by the daily press to the occurrence.

While the editors of the JOURNAL are members of the teach-

ing staff of Tulane, this is in no way an inspired article. It merely tries in a fair way to reflect the concensus of opinion in the medical profession of New Orleans. As is to be expected, there are some few who seize upon the occasion as a not-to-be-neglected opportunity to find more or less bitter fault with the teaching methods of the College of Medicine, with the personnel of the faculties, with the policies of the Board. The champions of Tulane, more numerous, are outspoken in their defense, many going to the extreme of saying that it is the business of the University alone.

To the impartial and unbiased there are two angles from which to view the question: the legal and the moral. Little need be said on the legal point. All professors are elected at the pleasure of the Board; again, the matter is very likely to be settled in the courts and, besides, it can only be a matter of some dollars. The moral side is the all important one. If the Board's action was based on the desire to throttle free speech or crush frank criticism, no outcry against it could be too loud or emphatic. Universities, of all institutions, should foster liberal ideas, invite advice as well as give it, accept suggestions as well as offer them. The Board of Tulane has always seemed to accept these self-evident propositions. What, then, was the reason for the dismissal? It was the ill-timed, ill-mannered, inimical and public outburst of fault-finding with most of the departments and many of the individual teachers of a school with which the accuser was connected, showing on his part a deplorable lack of harmony and **esprit du corps.** Team-work, so loudly lauded by him, had become impossible with him a member of the faculty—the logical action was to drop him. There is no need to go into contributory issues.

The report of the committee, to whom the matter was referred for investigation, is very full, as it includes both the charges of the dismissed one and the statements of the faculty in rebuttal. Unfortunately from its very fulness, it is exceedingly lengthy, and we fear that comparatively few have had the patience or the time to give it a close and complete reading.

This report was handed in unanimously by the committee and was adopted unanimously by the Board. A careful consid-

eration thereof forces the conclusion that not only was the Board justified in severing the connection between the harsh and dissension-provoking critic of his faculty and his Board and those colleagues themselves, but such action was imperative in the interest of the School of Medicine and the University.

The fact that part of the criticism had some foundation does not alter the principles of the case.

GENIUS PASSES.

On August 20 last, two contemporary scientists passed away, Paul Ehrlich and Carlos J. Finlay. The one was a great factor in the development of laboratory methods of bacteriologic investigation for nearly a quarter of a century and both were pre-eminent in the achievement of preventive medicine. Ehrlich's name is best known in connection with Salvarsan, but in diphtheria, studies of the blood, and in biochemistry he was a great pioneer.

Carlos Finlay's death comes to us more acutely because of his relation to the discovery of the cause of yellow fever, and even though he was eighty-two years old at his passing, he will be missed.

Both men will leave their names as monuments to the science of today and will be remembered for their accomplished tasks.

Medical News Items

Meeting of Obstetricians and Gynecologists.—The American Association of Obstetricians and Gynecologists will hold its twenty-eighth annual meeting at the Hotel Schenley, Pittsburg, September 14-16, under the presidency of Dr. Charles L. Bonifield, Cincinnati. An attractive program has been prepared and a full meeting is expected.

Meeting of Eye, Ear, Nose and Throat Specialists.—The American Academy of Ophthalmology and Oto-Laryngology will hold its twentieth annual meeting in Chicago, October 5-7, under the presidency of Dr. Joseph C. Beck. Clinics will be held at the various Chicago hospitals on the day before the meeting and the two days following, where members are

expected and will be welcome. The headquarters will be at the Hotel Sherman.

Tri-State Society Meeting.—The Tri-State Medical Society of Arkansas, Louisiana and Texas will hold its annual meeting at Marshall, Texas, December 14 and 15. Three medals will be awarded at this meeting for the three best essays on original work done throughout that year. The contest is limited to physicians residing in Arkansas, Louisiana and Texas. For further particulars, apply to Dr. Jacob Bodenheimer, secretary-treasurer, Shreveport, La.

Meeting of Missouri Valley Physicians.—The twenty-eighth annual meeting of the Medical Society of the Missouri Valley will be held in Des Moines, Iowa, September 23 and 24, under the presidency of Dr. Granville N. Ryan, Des Moines.

Eighth District Medical Society of Louisiana.—The Eighth District Medical Society, with prominent members from all the parishes in the district, met in the Rapides Parish Court House on July 30. There were prominent physicians from Rapides, Natchitoches, Avoyelles, Sabine, Vernon and Winn parishes present, and also several prominent men from other parishes of the State of Louisiana. Pellagra was among the live topics discussed at the meeting, the speakers dwelling upon the character of the disease and mode of transmission and treatment. In the discussion, it seemed to be the concensus of opinion that pellagra is an infectious disease, being transmitted through blood-sucking insects, the flea and bedbug being especially condemned. The next meeting of the Society will be held in Natchitoches on the last Thursday in October.

The American Proctologic Society held its seventeenth annual meeting at San Jose, California, June 21-22, and elected the following officers: Dr. T. Chittenden Hill, Boston, Mass., president; Dr. Frank C. Yeomans, New York City, vice-president; Dr. Alfred J. Zobel, San Francisco, Cal., secretary-treasurer; and Drs. Louis J. Krouse, Cincinnati, Ohio, Dr. T. Chittenden Hill, Dr. Geo. B. Evans, Dayton, Ohio, and Dr. Alfred J. Zobel, executive council.

Red Cross Physicians and Nurses Must Be Recalled.—It is announced that on account of exhaustion of the general fund which aggregated $1,565,000, the American Red Cross will have to withdraw its various physicians and nurses from European

battlefields on October 1. Of the 367 persons engaged in humanitarian enterprise, which the Red Cross has sent to the war zone, 71 were surgeons and 253 nurses, while 43 were members of the Serbian sanitary commission.

Medical Fellowship for Harvard.—An annual income of about $800 from a fund donated by Mr. Douglas Flattery, of Boston, has been presented to Harvard Medical School for the encouragement of the scientific study of the cause and prevention of disease.

Wisconsin Loses Chiropractic Bill.—According to report, the senate committee of Wisconsin turned down the bill which proposed to license chiropractors. It was the opinion of the committee that in its opinion this new school of practice was not entitled to recognition under the laws of the state.

Decrease in Tubercular Death Rate.—According to George M. Cooper, of Washington, the tubercular death rate has decreased from 326 : 100,000 population in 1880 to 146.6 in 1913.

Relief Fund for the Belgian Profession.—The Report of the Treasurer, Dr. F. F. Simpson, of the committee of the American physicians for the aid of the Belgian profession, shows, for the week ending August, 1915, a total disbursement of $7,310.04 and a balance on hand of $469.80. The total receipts are $7,779.84.

Post-Graduate Medical School to Reopen.—The New Orleans Post-Graduate School of Medicine will begin its second year as an affiliated institution of Loyola University. The arrangements are under approbation of the Jesuit Order of Rome, and the formal announcement of the date of the opening will soon be made. The board of directors of the school is made up of Drs. Homer Dupuy, president; William Kohlman, vice-president; Joseph A. Danna, secretary; Oscar Dowling, A. Nelken, C. G. Cole, Joseph M. Elliot, O. L. Pothier and T. J. Dimitry. It was reported that the school would organize an under-graduate medical department as part of Loyola University, but this has been denied by the authorities.

Kansas City's Pure Milk Ordinance.—An example of what can be done by a health board that is divorced from politics is shown in the work of the Health Department of Kansas City. Largely due to the persistent efforts of the Consumers' League,

aided by Dr. Paul Paquin's able direction, the new pure milk ordinance has gone into effect, and the quacks are gradually disappearing under the hot fire that is being levelled against them.

Baby Without Hands and Feet.—Tallapoosa, Georgia, has a case of a baby boy recently born without hands and feet. The baby lives and is six months old—an unusually bright, fat, healthy baby. Dr. W. H. Malone, of Tallapoosa, Georgia, writes in the July issue of the *Medical World,* in discussing the case: "I wish to state in this connection that I believe strongly in 'maternal impression.' Upon inquiry into this case, I found that the mother had seen a show about eleven months prior to birth of the baby. There was in the show a curiosity man, who had no upper extremities, and only one lower extremity with which he sewed and performed various stunts. I believe she reflected back to this event, or probably saw his picture, or it was discussed in her presence during early pregnancy."

Greased Tulle for Wounds in the French Army.—Dr. M. A. Lumiere, of Lyons, has discovered that the use of compresses of tulle with mesh of 2 mm., separated from each other by paper and sterilized by heat for an hour in a mixture of petroleum, wax, castor oil and balsam of Peru, will prevent the adhering to wounds while the secretions pass through the mashes of the tulle and are absorbed by the wadding of the dressings. This is a distinct advantage over the sterilized gauze dressings, which adhere to the wounds and are difficult to detach.

Test to Determine Sex.—A unique test has been proposed by Dr. Geo. Starr White, of Los Angeles, for determining the sex of the unborn child. The doctor places the prospective mother on a plate of aluminum with her face to the north. If her right finger points at you, it will be a girl; if the left hand happens to go up, it will be a boy. What would happen if both hands went up, or if the woman happened to be left-handed, is not provided for in Dr. White's test.

Local Option Favored by Physicians.—Over 700 physicians of Philadelphia, men and women, signed petitions to the legislature asking the passage of the local option bill.

Baby Hospital for Serbia.—A baby hospital, to be supported by the American Red Cross and to be carried on by American

doctors and nurses, is being established in Serbia. The hospital will be called the Mabel Grouitch Baby Hospital, in recognition of the Red Cross activities of Mme. Slavko Grouitch, wife of the Serbian Under-Secretary for Foreign Affairs, who is an American woman. Drs. Louise Taylor Jones, of Washington, and Catherine H. Travis, of New Britain, Conn., will have charge of the hospital.

Resignation of Dr. Mayer from Staff of "Centralblatt fur Laryngologie."—Dr. Emil Mayer, of New York City, who for the past sixteen years has been collaborator for America, tendered his resignation to the editor of *Centralblatt* because of the recent action of the editor and publisher of that journal in removing the name of Sir Felix Simon from the title page because of his expression of opinion as a naturalized English citizen regarding "Germany's barbarous warfare." As this action destroyed the journal's claim to be international in character, Dr. Mayer's resignation came as a protest against the introduction of politics in a scientific journal and in loyalty to a man who has done so much for laryngology.

War Demonstrates Position of Medical Sciences and Practice.—One of the encouraging facts among the many certain sad facts of the present horrible war is that among all the sciences and professions the medical sciences and medical practice occupy an almost unique relationship to warfare, and that, among all the citizens of a country at war, medical men and women occupy a peculiar and distinctive position, says the appeal of the "Medical Brotherhood for the Furtherance of International Morality," which has recently been sent out to the "men and women engaged in medical practice and the advancement of the medical sciences." This appeal is published in full in the *Medical Record,* New York City.

Personals.—Sister Regina Kenny, who for forty years had been in executive charge of hospitals, and for the last ten years sister superior of the Mobile Hospital, died on July 15.

Dr. Francis X. Mahoney has been appointed health commissioner of Boston. This action was taken by the mayor after consultation with Surgeon Richard H. Creel, U. S. P. H. S., who found that it would be impossible for him to accept the position.

Dr. C. D. Simmons was recently appointed physician and surgeon for the A. & M. College at Stillwater, Oklahoma. Dr. Simmons is a native of Baton Rouge, and graduated at the Louisville, Kentucky, Medical College, doing post-graduate work at Tulane University, New Orleans, New York City and Kansas City, Mo. He was a member o the Louisiana State Medical Examining Board, of which he became vice-president, and resigned to go to Oklahoma.

Dr. C. Borne, sanitarian and health officer from the Netherlands, visited New Orleans during the month. Dr. Borne is connected with public health service of the royal government of Holland and is making a tour of the larger cities of the United States, studying health and sanitary problems.

Dr. Clarence Pierson, of Pineville, La., paid a brief visit to New Orleans during the month.

REMOVALS.—Dr. P. J. Miller, from Carencro to Abbeville, La.

DIED.—On July 31, 1915, at Covington, Va., Dr. Wilbur Boswell Payne. Though a Virginian, Dr. Payne received his medical education at Tulane University and was well known in this city.

On August 7, 1915. Dr. Moses Blake, of Olla, La., aged 25 years.

Publications Received

F. A. DAVIS & COMPANY. Philadelphia and London, 1915.

Essentials of Laboratory Diagnosis, by Francis Ashley Faught, M. D. Fifth edition.

W. B. SAUNDERS & COMPANY. Philadelphia and London, 1915.

Diarrheal, Inflammatory, Obstructive and Parasitic Diseases of the Gastro-Intestinal Tract, by Samuel Goodwin Gant, M. D., LL. D.

The Treatment of Fractures, by Chas. Locke Scudder, M. D. Eighth edition.

The American Pocket Medical Dictionary, edited by W. A. Dorland, A. M., M. D., F. A. C. S. Ninth edition, revised and enlarged.

A Manual of Personal Hygiene, edited by Walter L. Pyle, A. M., M. D. Sixth edition, revised and enlarged.

Operative Gynecology, by Harry Sturgeon Crossen, M. D., F. A. C. S.

Collected Papers of the Mayo Clinic, Rochester, Minn., edited by Mrs. M. H. Mellish. Volume V, 1914.

The Clinics of John B. Murphy at Mercy Hospital, Chicago. June, 1915.

The Medical Clinics of Chicago. Volume 1, No. 1. July, 1915.

LEA & FEBIGER. Philadelphia and New York.

Chemistry and Chemical Urinalysis for Nurses, by Harold L. Amoss, S. B., S. M., M. D., DR. P. H.

Cancer: Its Study and Prevention, by Howard Cannong Taylor, M. D.

P. BLAKISTON'S SON & COMPANY. Philadelphia, 1915.

The Development of the Human Body, by J. Playfair McMurrich, A. M., Ph.D., LL.D. Fifth edition, revised and enlarged.

The Ductless Glandular Diseases, by Wilhelm Falta. Translated and edited by Milton K. Meyers, M. D., with a foreword by Archibald E. Garrod, M. D., F. R. C. P., F. R. S.

A Compend of Medical Chemistry, by Henry Leffmann, A. M., M. D.

THE YEAR BOOK PUBLISHERS. Chicago, 1915.

The Practical Medicine Series. Volume IV: **Gynecology**, edited by Emilius C. Dudley, A. M., M. D., and Herbert M. Stowe, M. D.

WASHINGTON GOVERNMENT PRINTING OFFICE. Washington, D. C., 1915.

Public Health Reports. Volume 30, Nos. 27, 28, 29, 30.

Report of the Department of Health of the Panama Canal for the Month of May, 1915.

Typhoid Fever, by Paul Preble.

Reprints

Mistakes in Urinary Diagnosis; The Frequent Error of Mistaking Indican and Other Reducing Substances for Grape Sugar, by Theodore William Schaefer, M. D.

Some Facts Pertaining to the Wassermann Reaction in Relation to Diagnosis and Treatment, by R. B. H. Gradwohl, M. D.

Notes on Michigan Liliaceæ, by Oliver Atkins Farwell.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans for July, 1915.

Cause.	White	Colored	Total
Typhoid Fever	6	.....	6
Intermittent Fever (Malarial Cachexia)	3	2	5
Smallpox	.....	.....	....
Measles	.....	.....	....
Scarlet Fever	.....	.....	....
Whooping Cough	1	.....	1
Diphtheria and Croup	3	1	4
Influena	1	.....	1
Cholera Nostras	.....	.....	....
Pyemia and Septicemia	2	1	3
Tuberculosis	26	58	84
Cancer	19	10	29
Rheumatism and Gout	.....	1	1
Diabetes	3	.....	3
Alcoholism	1	.....	1
Encephalitis and Meningitis	3	1	4
Locomotor Ataxia	1	.....	1
Congestion, Hemorrhage and Softening of Brain	23	15	38
Paralysis	4	.....	4
Convulsions of Infancy	.....	.....	....
Other Diseases of Infancy	23	7	30
Tetanus	.....	1	1
Other Nervous Diseases	7	3	10
Heart Diseases	34	36	70
Bronchitis	3	4	7
Pneumonia and Broncho-Pneumonia	12	17	29
Other Respiratory Diseases	4	1	5
Ulcer of Stomach	1	3	4
Other Diseases of the Stomach	3	3	6
Diarrhea, Dysentery and Enteritis	16	9	25
Hernia, Intestinal Obstruction	1	.....	1
Cirrhosis of Liver	2	6	8
Other Diseases of the Liver	1	2	3
Simple Peritonitis	.....	.....	....
Appendicitis	5	2	7
Bright's Disease	26	13	39
Other Genito-Urinary Diseases	21	12	33
Puerperal Diseases	3	5	8
Senile Debility	2	1	3
Suicide	6	.....	6
Injuries	24	29	53
All Other Causes	20	17	37
Total	316	264	580

Still-born Children—White, 23; colored, 27. Total, 50.

Population of City (estimated)—White, 272,000; colored, 101,000. Total, 373,000.

Death Rate per 1,000 per Annum for Month—White, 13.94; colored, 31.37. Total, 18.66. Non-residents excluded, 16.25.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure 29.99
Mean temperature ..... 85.
Total precipitation ..... 7.55 inches
Prevailing direction of wind, southwest.

New Orleans Medical and Surgical Journal.

VOL. LXVIII. OCTOBER, 1915. No. 4

Original Articles

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. A complimentary edition of one hundred reprints of his article will be furnished each contributor should he so desire. Covers for same, or any number of reprints, may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

CLINICAL REPORTS OF CASES PRESENTING FEATURES OF UNUSUAL SURGICAL INTEREST.*

By RUDOLPH MATAS, M. D., New Orleans.

1. Cardiospasm causing an enormous dilatation of the esophagus and a curious symptom complex, completely relieved by hydrostatic (retrograde) dilatation with an improvised Plummer's apparatus.

The patient, Miss B. S., of Columbia, Miss., a bright young lady of seventeen years, was referred to me for treatment through the kindness of Drs. J. D. Weis, of New Orleans, and L. D. Dickerson, of McComb City, on October 15, 1914. She had been ill for over two years and had been treated for various conditions until Dr. Weis recognized, by a fluoroscopic examination at the laboratory of the Touro Infirmary, in charge of Dr. Samuel, that she was suffering from a dilatation of the esophagus caused by an obstruction at the cardiac orifice of the

*Extracts from a "Stereopticon Clinic," illustrated by lantern slides and presented by invitation at the 48th Annual Meeting of the Mississippi Medical Association, Hattiesburg, Miss., May 11-13, 1915.

stomach, which he attributed to cardiospasm. When this conclusion was arrived at, the patient had reached a period of extreme acuteness in the clinical history of the disease. The previous history of the patient at first offered no very suggestive facts. She is the daughter of healthy, robust parents, without any notable hereditary antecedents. As a child she had always been healthy, strong and vivacious. She had gone through an unusually severe attack of whooping cough and measles. The only significant fact that could be elicited from medical history was that in early childhood, when two years old, she had accidentally swallowed a very small quantity of condensed lye, but this familiar accident of childhood had not been followed apparently by any serious consequences, as the error was discovered almost immediately; and the child swallowed so little of the lye that no importance was attached to the accident, and it would have been forgotten if the present symptoms, occurring over fifteen years after, had not again recalled it to memory when the real nature of her trouble was recognized in October, 1914. During this long interval of time, the child was seemingly well until about two and a half years before she came under my observation. In the light of the radiologic findings, her history was most typical. Her symptoms had developed along the three distinct lines of the pathognomonic triad that is peculiar to this condition: (1) The stage of discomfort, retrosternal oppression, retroxiphoid cramping and occasional pain, gradually followed by (2) regurgitation of food with sensations of choking and (3) the signs of retention with a great aggravation of the choking signs. The choking spells, which occurred at different times in the course of the two years that preceded the X-Ray diagnosis, constituted the dominant feature of the clinical picture and were so salient that they were attributed to some obscure spasmodic bronchial or pulmonary disease for which the patient was sent to different climates. Gradually these attacks became more frequent. Then it was noticed that they came on at night, especially after taking cold foods and beverages.

During the three months that preceded her admission to the Infirmary, the choking spells were provoked by eating anything; but there was no regurgitation or vomiting except when the patient would lie down, especially at night. For several weeks the paroxysms had become a constant nightly occurrence. Miss

Obs. I. MISS S. (CARDIOSPASM)

No. 1. Radiograph shows the dilated esophageal pouch and contracted stomach partially filled with the contrast (Barium) meal, before treatment was begun.

No. 2. Radiograph taken four months after treatment by retrograde dilatation had overcome the cardiospasm. The esophageal pouch has disappeared, the contrast meal finds its way immediately into the stomach which is now enlarged to normal size; the rounded domelike expansion shown in the picture is caused by the air bubble which has been forced into the fundus by the rapid entrance of the Barium meal.

S. would go to bed apparently comfortable; she would go to sleep promptly and profoundly, but in fifteen or twenty minutes after entering into a deep slumber, and while still asleep, she began to make a peculiar gurgling noise which gradually grew in intensity and loudness until it was interrupted by violent paroxysms of spasmodic cough which initiated the "choking spells." During these spells she made the peculiar gurgling noise previously referred to and which was described as possessing an uncanny character that resembled a death rattle and could be heard distinctly fifty feet away from the patient's bedroom. After continuing for a variable time, the gurgling ended in the regurgitation and violent ejection of food, in large quantities from the mouth and nostrils. It was not until this regurgitation had been completed that the choking spells ceased and the patient could again sleep in peace.

Repeated examinations of the chest and abdomen by ordinary methods were always negative. In the meantime the patient was losing flesh rapidly and by the time the fluoroscopic examination was made in October she had grown very weak and had lost thirty pounds. She weighed normally 135 pounds and now weighed 105.

The fluoroscopic examination made after a contrast (barium) meal at once revealed the true cause of the trouble and explained all these strange phenomena. The radiograph which I am now exhibiting (plate I, fig. 1) shows the esophagus enormously dilated, forming an immense pouch which, beginning about the level of the cricoid cartilage, ends in a flask-like expansion resting with the level of the diaphragm. The pouch is not distended to its full capacity but is sufficiently full in the radiograph to give an idea of its large size. The radiograph also shows the pointed distal end which overlaps the narrow cardiac orifice of the stomach. The plate also shows that the contrast(barium) meal has penetrated into the stomach but that the bulk of the meal is still lodged in the esophageal pouch where it outlines a space larger than the normal stomach. The stomach itself is contracted and small, and in this way the appearances are those of a bilocular stomach, one, an intrathoracic pouch large and elongated, resting above the diaphragmatic level, and the other much smaller, lying in the abdomen, under it.

The radiograph shows that the esophageal pouch held practically all the food the patient took during the day, amounting to two or three meals and more, though these were not very full meals, as the patient was rapidly losing her appetite in the last three weeks as the choking spells interfered with her rest and caused increasing distress. Comparatively little of this food trickled down into the stomach through the tightly constricted cardiac orifice. The girl was really starving while apparently eating sufficiently to nourish a normal individual. At night, during sleep and while lying in a horizontal position the pouch would empty itself by regurgitation and reversed peristalsis in a rhythmic fashion. The soft, macerated and semi-liquid food would empty itself in gushes, which finding the laryngeal reflexes unprepared, partially entered the glottis causing the peculiar gurgling noises which culminated in the spasmodic, stridulous cough and choking sensations which were only relieved by the final ejection of the food from the pouch. In consequence of these nocturnal disturbances the patient had been compelled to abandon her school as it was impossible for any of her schoolmates to room with her. In fact in the last three months the mother had been compelled to sit up at night in anticipation of this nocturnal performance, which was as unfailing as it was distressing and alarming.

TREATMENT

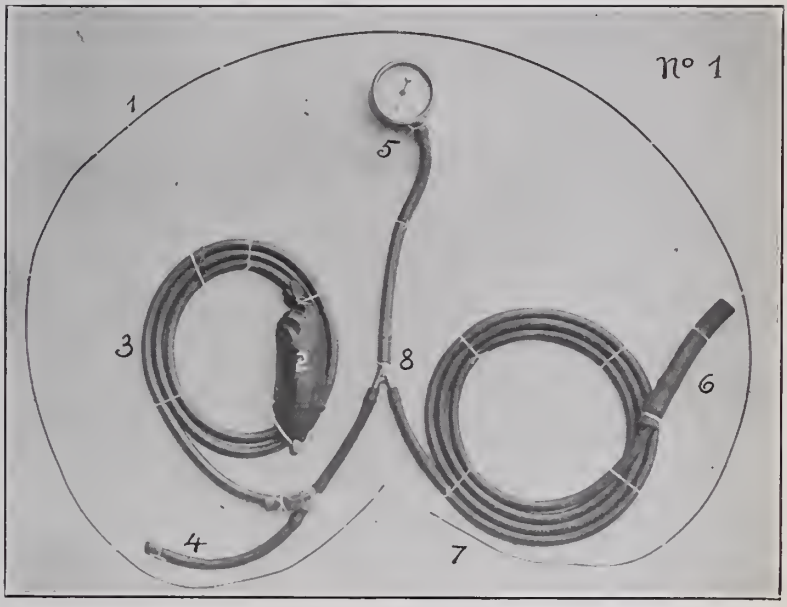
The treatment was begun shortly after the patient was referred to me on October 15, 1914. At first all attempts to pass a gastric tube and olive-pointed bougies failed. The probes only confirmed the fact that the obstruction was at the cardiac orifice of the stomach. The stomach tube simply coiled itself in the pouch but did not find its way to the cardiac orifice. Following Mixter's suggestion, the patient was given a stout silk thread to swallow and this readily passed into the stomach and duodenum so that on the second day the thread held taut when pulled, and allowed two of Plummer's perforated olive-pointed bougies to be threaded upon it, and in this way readily passed into the stomach. The fluoroscope clearly demonstrated that the metallic olives had passed well into the stomach, guided on the thread which acted as a pilot. After this the dilatation of the cardia became an easy matter. On October 19 a stiff horse catheter

was threaded on the pilot thread and passed into the stomach without difficulty; the stomach was then washed out and a pint of milk and three eggs were left in the gastric cavity after this had been washed out. After this, the esophageal pouch was washed out daily with the gastric tube before the patient retired at night and in the morning on rising by the patient herself, who gave the most intelligent co-operation in her treatment. The pouch in this way was kept empty and clean. From this on, the gurgling noises and choking spells ceased completely and the patient enjoyed undisturbed sleep. On October 20 the stomach tube was passed into the stomach without the thread guide; the stomach was washed and a No. 36 Porges esophageal bougie was introduced over the pilot thread. This was followed by the passage of the stomach tube without a guide, and a meal of milk, eggs and beef juice was left in the stomach. From October 20 to 22 the patient fed herself three times a day by the gastric tube with a variety of liquid and soft foodstuffs. This feeding with the tube was kept up systematically by the patient with the view of preventing accumulation in the pouch and favoring its contraction. On October 22 an improvised Plummer's hydrostatic dilator, to which a Jeckh water gauge (manometer) was attached, was now introduced into the stomach—guided by the pilot thread. This thread the patient had kept in place after the first introduction, and it had gone through the gastro-intestinal tract and was discharged with the movements of the bowels, the excess of thread being cut off as it hung from the rectum. It caused little inconvenience and was fed continuously from a spool as the peristaltic movements of the bowels moved it along the intestinal canal. Plummer recommends that the patient swallow six yards of silk thread; this passes through the coils of small intestines, becoming engaged in them so that the string cannot be pulled out on being drawn taut. I found that in this case it was just as well to let the thread go through the intestinal canal and remain in situ, in order to avoid the necessity of repeated swallowing of the thread until the dilatation of the cardia had been successfully accomplished.

The hydrostatic dilator originally suggested by Russell and simplified by Plummer is so readily constructed that any surgeon with a little patience and ingenuity can easily improvise it.

Furthermore, it is so effective and safe, and meets the indications so satisfactorily, that it appears to me that, in principle at least, it is destined to supercede all the other methods of treatment in which dilatation is applicable. The profession is deeply indebted to Plummer for demonstrating and popularizing Russell's splendid idea, which would have probably remained in obscurity had it not been taken up by Plummer who made its merits known to the large audiences that for so many years have witnessed his admirable performances at the Mayo clinics. It will be seen by those who are familiar with Plummer's work, that the simple apparatus, which is illustrated in plates II and III, and which was made for me by my assistant, Dr. L. H. Landry, for the special treatment of this case, differs in some details from the original Plummer device, though it is essentially the same in principle. It is in the method of applying hydrostatic dilatation that I have deviated from Plummer's directions. He recommends that the position of the cardia should be previously accurately determined. The olive is threaded on the string sufficiently for the cardia to engage the balloon in its middle third. "The instrument (gastric tube) carrying the balloon and stiffened by a stilet, is held firmly by the right hand, the index finger resting against the teeth to prevent the dilator being drawn into the stomach. The tap is now opened enough to fill the balloon, but not to indicate any pressure. The pressure is now slowly raised by releasing the drainage tube with the fingers of the left hand or the hand of an assistant. This is to be continued until the gauge registers 575 mm., or about what has been found to be sufficient in the great majority of cases, and still be within the limits of safety."

The method of dilatation adopted in this case differs from the above in the important fact that I did not attempt to determine the exact position of the cardia by measurement. Neither did I try to dilate the contracted cardiac orifice by inflating the balloon while this was engaged in the constricted ring. I tried to do this in the beginning, but I always felt an uncertainty as to the exact position of the balloon in the esophagus. The first attempt at dilatation in this case was made after the balloon had been placed in situ and watching the relations of the metallic olive to the esophagus and stomach previously mapped out by a Bismuth mixture; but I could not satisfy myself each time



IMPROVISED AND MODIFIED PLUMMER APPARATUS FOR RETROGRADE DILATATION OF CARDIOSPASM.

No. 1 .Pilot thread carried through eye of metallic olive in dilating balloon.

No. 2. Hyrdostatic dilating balloon or water bag.

No. 3. Gastric rubber tube connected to manometer (5) by (8) V-shaped tube and drainage or outlet tube (4).

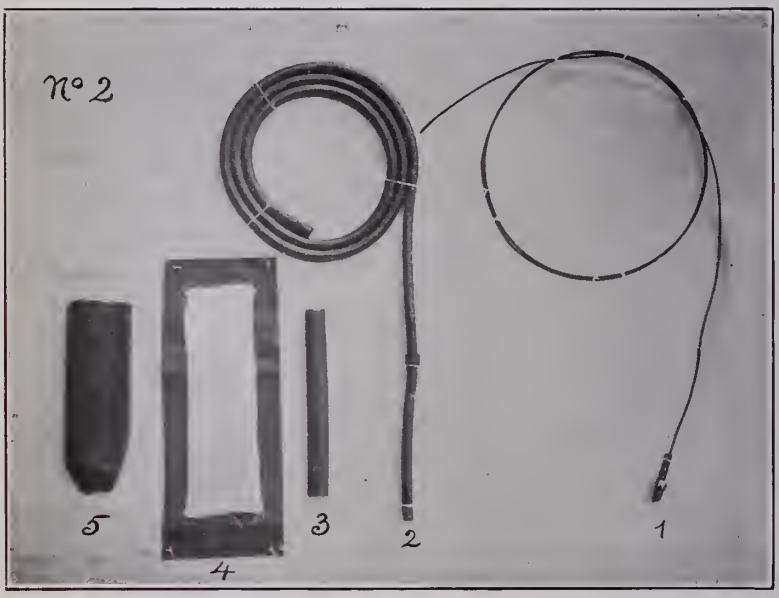
No. 4. Outlet of drainage tube which controls the tension in the dilator.

No. 5. Manometer (Jeckh water gauge, U. S. Gauge Co.)

No. 6. Hydrant or tap connection to supply the dilator.

No. 7. Heavy copper wire stylet to stiffen gastric tube when introducing dilating bag into stomach.

No. 8. V-shaped joint to connect hydrant and stomach tube and water gauge.



No. 2.

TO SHOW DETAILS IN THE MAKEUP OF THE WATER BAG DILATOR.

1. Olive-pointed metallic tip with large eye for the pilot thread; eye large enough to allow knots and snarled thread to pass through. The olive is provided with a hollow stem ½-inch long, which allows the stiff wire stylet to hold firmly in the socket without liability to displacement while the dilator tube is introduced into the stomach.
2. Gastric rubber tube perforated at the tip to allow the attachment of the olive at the tip, and with leak holes in the sides to fill the jacket with water.
3. Rubber jacket to be cemented and fitted to the gastric tube, constituting the water chamber.
4. Silk cover to protect the rubber jacket and prevent undue and irregular expansion of the water chamber.
5. External rubber jacket to fit loosely over silk cover, intended to facilitate the introduction of the completed and lubricated dilator.

that the balloon was being dilated in the cardiac ring. It seemed to me so much easier to introduce the collapsed balloon into the stomach directly and then, after dilating it to the desired size, as shown by the manometer, to engage the contracted ring from the gastric side, and then dilate it by extracting it (the distended balloon) from below upwards. In other words, we substituted *retrograde* dilatation for intra-cardiac dilatation. In this way, the sense of resistance of the stricture, as well as of the yielding of the stricture, when the resistance had been overcome, was unmistakable and greatly simplified the procedure.

By introducing the bag into the stomach in a collapsed state and then filling it with water under pressure from the tap, a sausage-like cylinder two and a half to three inches in diameter is obtained (equal to 5 lbs. pressure in the gauge) which being gradually extracted from the stomach by steady traction from above, with the gastric tube, safely dilates the cardia by allowing the operator to feel constantly the degree of resistance that he is to overcome.

The water gauge should always register the amount of dilatation. When the balloon is in the stomach, water is run into it until five pounds pressure are registered in the gauge. Then traction is begun, and as resistance is encountered in engaging through the spastic area, the water is allowed to run out until the pressure falls to three or three and a half pounds, as the resistance increases. In our first dilatation we got the balloon through the stricture with a pressure of three pounds in the gauge. In subsequent dilatations, the pressure has been three and a half pounds, and once four pounds. After the resistance is overcome, the water in the bag is allowed to run out and the balloon is extracted from the esophagus in a collapsed state. One of the advantages of this retrograde dilatation is that the dilator enters the contracted ring as a wedge or a cone, from below, and gradually stretches the stricture to the maximum diameter desired as it is being extracted, by traction, on the apex of the cone. In extracting the dilator no violent or sudden efforts are permissible. Traction is made against the resistance for one or two minutes at a time. When the patient complains of marked retro-sternal pain, the balloon is allowed to go back or the pressure is diminished by allowing some of the water to run out of the controlling drainage tube. The same attempt

is repeated gently but steadily for four, five or more times, each time with a little more insistence until the resistance is overcome. No blood-stain should appear on the dilator or in the stomach washings following this procedure.

After the first dilatation, marked improvement was noticed in the patient's condition. The patient was able to eat and drink freely and comparatively little residue remained in the pouch. Sleep became normal and a rapid gain in flesh and strength was noticed. From October 15, 1914, to May 10, 1915, the dilator has been applied six times. On May 9 the patient had gained thirty-six pounds and has returned to her boarding school. As a precautionary measure, she has been advised to return for examination every six weeks or two months. As the patient has become an expert with the gastric tube, she has been making weekly explorations or lavages of the stomach to determine any possible recontraction or the presence of any residue in the pouch.

The radiograph exhibited in this plate, taken in March, 1915, immediately after the administration of a Barium meal (Pl. I, fig. 2) shows the esophageal pouch empty and free from food residue, proving that whatever pouch there is, it has enormously contracted. The stomach is full and much larger than when the patient was first radiographed and before the treatment began. The stomach has enlarged and resumed its normal capacity with a return of its functional activity.

COMMENTARIES.

The cardiospasm in this case was probably caused by some form of ulceration or fissure at the cardiac end which excited reflex spasm and which had its origin in early years in the ingestion of a minute quantity of caustic lye. The rapidity with which the obstruction at the cardia yielded to dilatation makes it almost certain that the spastic contracture preponderated as the cause of the obstruction. This case, which we have selected out of a dozen instances of cardio-spasm that have come to us for treatment in the last three years, confirms the opinion that cardio-spasm is only a condition or pathologic state which may be brought about by a variety of causes, some of which still remain unknown. This case illustrated the simplicity of dilatation by utilizing the well-known thread guide originally

suggested by Mixter, and the principle of the hydrostatic dilator which has been made familiar to the profession by the excellent work of Russell, Plummer and Lerche.

I have laid stress upon the technic adopted in this case to show the ease with which the dilator can be improvised, and also because it has satisfied me that the method of retrograde dilatation, by extracting the dilator from the stomach through the contracted area, in the manner previously described, still further simplifies the procedure and adds to its efficiency and safety.

The fate of the esophageal pouch, especially when it has attained the large proportions that were observed in this case, is a matter of serious concern. The radiographic and fluoroscopic image of the esophagus obtained four months after the dilatation of the stricture had been accomplished, showed that the pouch had practically disappeared and had recontracted, as demonstrated by a total absence of all food debris, not only by the fluoroscope but by the systematic washing of the esophagus with the gastric tube. This excellent result is attributable in part to the fact that for over two weeks after the dilatation had been effected, the patient washed out the esophageal pouch regularly with plain water and fed herself with liquid and soft foods introduced through the gastric tube in order to avoid accumulation and over-stretching in the lower pockets of the pouch.

There is no question that in these cases the best results are obtained by the closest attention to details on the part of the operator and by the intelligent co-operation of the patient in faithfully carrying out instructions, which was pre-eminently true in this case.

Obs. 2.—Epiphyseal osteo-chondroma of the upper rim of the acetabulum of the hip joint. Extirpation of the growth without injury to the joint. Recovery. (Clinical notes by Dr. Levy, Resident Officer, Touro Infirmary.)

Miss E. R., of D., Texas, age twenty-one years, was admitted to the Touro Infirmary on December 30, 1914.

Family History: Mother and father living and well. Seven brothers and two sisters all living and well. Negative history for tuberculosis or malignancy.

Previous History: Patient had been well all her life. Has

had measles and whooping-cough when a child. Had neuritis (?) in both thighs two years ago, which lasted one and one-half years; had severe pains in both limbs. Was entirely cured by electric treatments. Has never had any injury or fall or trauma of any kind in the thighs. Has lost about ten pounds in the last six months. Bowels constipated. Appetite good. Urination normal; menstruation normal.

Present Illness or Injury: The patient has been well up to seven months ago, when the patient began to feel a stiffness in the right hip joint, with a dull aching pain in the joint. Pain was more or less present all the time, but was increased by walking and became less when she would remain quiet at nights. The pain and stiffness became so bad that she had to take to her bed and stayed in bed three weeks, getting up at times to make a few steps. This disability has continued in this way with little change except that two months ago she had felt a little better and was up walking about when she slipped, but did not fall—she caught herself, but injured her hip. It pained her very much after the strain, and since that time she has gotten worse. She has walked with a limp, and since that time has grown worse. Has walked with a limp since the pain started. The limb was splinted at the time of the fall and for two weeks after. She has been getting worse, weaker, thinner and paler since, being in bed more or less all the time.

Sleeps very poorly, and is very nervous. Pain is dull in character in the region of the hip and does not radiate, though at times the whole thigh pains her. The limb feels dead at times. Her foot "goes to sleep" often.

Physical Examination: Patient is well-developed, rather thin and pale. Physical examination negative, except for the thigh. There is great tenderness over the whole area about the right hip joint. There is some hardness and induration above the trochanter, but it is very slight. Some fullness about the hip joint, and great tenderness on the slightest touch.

Several examinations have been made by prominent surgeons, who have examined her at home and in San Antonio, Texas, and various opinions have been expressed. The leading diagnosis was coxalgia or hip disease; but others have suggested after X-ray examinations that she might have a malignant tumor involving the hip. Dr. E. Hatch, who saw the patient at his office during

Obs. II.—(CASE OF MISS R.)—EPIPHYSEAL OSTEO-CHONDROMA OF THE UPPER ACETABULAR RIM GROWING INTO AND DISABLING THE HIP-JOINT.

No. 1. Radiograph of hip-joint in Miss R's case, showing pediculated epiphyseal osteo-chondroma of the rib of the acetabulum growing into the hip-joint and causing disability by locking the joint inflection and abduction.

Finger- resp. griffelförmige Exostose (E) mit Knorpelüberzug am unteren Ende (a) bei einem 18jährigen Manne, 9 cm lang und von der Spina iliaca anterior inferior dextra ausgehend (nach H. Braun).

No. 2. Copy of a drawing showing a finger-shaped exostosis which originated from the right anterior inferior spine of ilium and caused a functional disability stimulating an ankylosis of the hip joint. While very different in origin and in its relation to the joint, this case is the nearest approach to that of Miss R. reported in the text (originally reported from Volkmann's clinic in Halle, by H. Braun in Deutsch Zeitschrift fur Chirurgie, XXX 1890, p. 199, and reproduced in Tillmann's Chirurgisch. Krankheiten des Beckens Deutsch. Chirurgie, Lief, 62a, 1905.)

Dr. Matas' absence, recognized a tumor of the hip, but would not commit himself upon its true nature.

The patient was advised to have an exploratory incision. She returned to her home in Texas and then came back to Dr. Matas, who had other X-ray plates made by Dr. Samuel, Radiologist of the Infirmary, which showed the tumor mass very distinctly. The fluoroscope and X-ray plates show a mass, well circumscribed, about the size of an egg, seemingly attached to the upper edge of the acetabulum, hanging over the neck of the femur, and moving with abduction and adduction. The fact that the tumor moved with the head of the femur suggested that it must be pedunculated. This also suggested to Dr. Matas that it probably was an epiphyseal enchondroma; but whether it involved the joint and had grown from the femur as an intra-articular growth or was a purely extra-articular tumor which was growing downwards into the joint but still remaining outside of it, could not be definitely determined. The conviction grew with the X-Ray examination, that the tumor was benign osteo-chondroma in character.

Operation at the Touro Infirmary on December 3, 1914.

REPORT FROM NOTES DICTATED BY DR. MATAS.

The operation was performed under gas-ether anesthesia. A slightly curvilinear incision was made over the hip joint, about six inches in length, with the center of the incision touching the great trochanter. After dividing the aponeurosis and the fibres of the glutei, the tumor was recognized as it rested on the capsular ligament of the joint, displacing the tendon and belly of the pyriformis.

The tumor filled the space between the upper rim of the acetabulum (iliac portion) and the great trochanter. It had formed a deep hollow or nest for itself in the upper and posterior surface of the joint. The capsular ligament had been thinned by pressure atrophy; but was otherwise intact. The tumor, which was ovoidal in form, was about the size of a small egg and was hard and osteo-cartilaginous in structure. When mobilized after careful dissection with elevators, it was found to be pediculated with the pedicle attached, by a broad and hard osteo-cartilaginous base about one inch and a half in

thickness, to the rim of the acetabulum and the surface of the ilium immediately below, and to the outer side of the anterior inferior spine.

The pedicle was chiseled off from its base of attachment, leaving a broad smooth and clean osseous surface. As previously stated, the growth had moulded itself to the space bounded by the trochanter major externally, and the ilium on the proximal side, growing downward towards the joint, in consequence, no doubt, of the muscular pressure and resistance of the muscles and tendons, especially of the glutei, the pyriformis, and deflected tendon of the rectus.

The tumor evidently followed the movements of the joint, but, by wedging itself between the trochanter and its fixed attachment to the ilium above the acetabular rim, interfered with the movements of the hip-joint in abduction, outward and inward rotation, and, to some extent, in flexion. The tumor weighed 40 grams, and measured 5 by 5½ cms. Sections of the tumor showed it to be a pure fibro-chondroma.

After the extirpation of the tumor, the hollow space left vacant was filled by overlapping the muscular fibres of the gluteus medius and minimus. The fibres of the maximus and aponeurosis were separately sutured with catgut, and the cutaneous incision closed with silk-worm suture, without drainage. A plaster cast was then applied over the pelvic girdle, thigh and leg, to the ankle, which completely immobilized the limb.

The cast was removed on January 13 (fourteen days after the operation) when the wound was found to have healed completely and throughout, by first intention. A small gauze dressing, held in place with adhesive plaster, was then applied over the scar. The patient was allowed to sit up on the twentieth day, and began to walk about on the twenty-fourth day after the operation. She was out of the Infirmary, riding in a carriage on the twenty-sixth day, and was discharged on the twenty-seventh day, January 26, 1915.

The patient's convalescence was rapid and was only interrupted by a mild attack of influenza, which was prevailing in the city, during the first week following the operation. At the time of discharge, the patient walked without support with a cautious and stiff gait, favoring the affected side, as the result

of rigidity of the sutured muscles; but with completed restoration of the movements of the hip-joint, except for a limitation of about 20 degrees in extreme flexion of the thigh on the pelvis, which is attributed to the same cause.

The patient was advised to exercise the hip by walking and by exercises which will develop the flexion and extension of the joint, hot baths, massage and passive movements. The patient has since recovered her normal gait completely.

COMMENTARIES.

This case is of special interest from the diagnostic point of view. The history of the patient shows plainly that even the most experienced practitioners may be confused and misled by the symptomatology and appearance of such a case, and that the diagnosis of hip-joint disease and of malignant tumor of the para-coxal region will readily suggest themselves, unless the resources of the X-Ray clear up the obscurities of the clinical history by unmasking the real character of the bone lesion.

In this case, the fluoroscopic image obtained while the hip-joint was studied in various attitudes and in motion, and by repeated radiographs which gave still greater definition to the structures in the involved area, permitted an almost positive pre-operative diagnosis and prognosis. The operation only confirmed what had been clearly demonstrated by the X-Rays. The gross, as well as the histological findings, of the tumor also confirmed the diagnosis of epiphyseal osteo-chondroma.

While chondromata and osteo-chondromata of the pelvis are far from rare, this particular type of epiphyseal outgrowth is quite unusual. I am not acquainted with an exactly similar growth recorded in the literature. The nearest approach to this form of isolated epiphyseal growth is in the two cases operated by Volkmann of Halle, and reported for him by H. Braun in the *Deutsch Zeitschrift f. Chirurgie*, 1890, p. 199, in a paper on rare forms of finger and pencil-like exostoses, which is also quoted and illustrated in Professor Tillmann's excellent monograph on the surgical diseases of the pelvis, in the *Deutsch. Chirurg. Lief.* 62a, 1905, p. 711. (See fig. 2.)

I have attached an illustration from Braun's paper, showing the finger-like growth which Volkmann removed from the right ilium close to the hip-joint. By comparing the radiograph of

Miss R.'s case with Volkmann's, the great differences in the shape and position of the two growths are very apparent. However, there is no doubt that in their origin as epiphyseal outgrowths, and in their disturbing effects upon the function of the hip-joint, they are very similar.

The great advantage that we enjoyed in the treatment of our patient was that the X-Rays gave us a clear insight into the conditions that we would meet in the operation, an advantage which was denied to Volkmann twenty-five years ago.

The first to observe this type of bone growths, to which he applied the special name of exostosis cartilaginosa, was Sir Astley Cooper, who, however, did not differentiate strictly between epiphyseal exostoses and enchondromata. It is apparently due to Virchow (1864) that the anatomical and histological differentiation between these growths was first established.

The starting point of these exostoses is probably a particle of persistent primitive bone cartilage or, in other cases, a displaced cell mass of the epiphyseal or even articular cartilage. Proliferation and secondary ossification is inherent to the cells. For this reason, they are peculiar to early growths and usually, although by no means invariably, stop growing when the normal period of ossification in the parent bones has been completed—an observation which was emphasized long ago by Syme.

In our case, the tumor seemed to grow from the epiphyseal cartilage of the ilium at the upper rim of the acetabulum. As it grew downwards, it formed a nest for itself in the trochanteric fossa, and the constant movement of the joint gave its free or movable portion a globular or pyriform shape. It caused no serious inconvenience until it grew large enough to wedge itself between the trochanter and the head of the femur, thus interfering with the abductor and flexor movements of the hip. Traumatism appears to be a frequent exciting cause of these bone growths which may be tolerated for years without causing notable interference with the joint movements. In this case, the fall, sustained by the patient, on the hip, greatly accelerated the growth of the tumor, as is shown by the rapid, almost sudden, increase in the disability which already existed to a moderate extent before the accident.

The prognosis of these growths is excellent. I have had a good share of experience in the removal of epiphyseal exostoses

in almost all the long bones of the skeleton, and when they were pure exostoses osteochondromata of the epiphyseal regions, occurring at puberty or adolescence, or at the close of the period of ossification, they have never recurred after thorough removal.

(*To be concluded in November* JOURNAL)

INFECTIOUS DIARRHEA.*

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The results accomplished by staff members of the Boston Floating Hospital need only to be mentioned, in order to remind one of the splendid research work accomplished by them. The work of Kendall and his associates has meant perhaps more regarding the bacteriological etiology of infectious diarrhea than any similar investigation given to the profession up to the present time. Accepting the facts as established by him, and noting what additional work he completed during the summers following, has left but little indeed to be desired on this particular subject. For matter of convenience, the following outline has been compiled and will serve as a guide to the work:

I—Review—Etiological Factors. II—Method of work. III—Brief Histories of Cases. IV—Clinical Manifestations: A—Age, B—Sex, C—Nationalities, D—Previous Food, E—Duration of Illness, F—Facies, G—Vomiting, H—Diarrhea, I—Weight and Emaciation, J—Neurological Findings, K—Temperature, L—Respiration, M—Pulse. V—Classifications. VI—Mortality. VII—Relation, Temperature, Food and Bacteria. VIII—Summary. IX—Bibliography.

I—REVIEW—ETIOLOGICAL FACTORS.

The history of the causative factors of infectious diarrhea presents a most interesting narrative. As early as 1880, (1) Day remarks:—

"It (Infectious diarrhea) was so frequent during the period of first dentition, that some writers considered dentition a cause. (Louis Smith.)" "It is in my experience, far more frequently due to atmospheric influences and errors of diet. Among the other causes of this form of diarrhea may be enumerated, damp and cold, and transitions of weather, but errors in diet would appear to be a fertile source of

*Read before the Orleans Parish Medical Society, August 9, 1915. (The data herein contained is the result of observations made by the writer while Clinical Pathologist, aboard the Boston Floating Hospital for the month of August, 1914.) [Received for publication August 31, 1915.—Eds.]

its origin. If the nurse's milk is too rich or in any way unhealthy, it is very likely to set up diarrhea in this form.*

Following, in 1882, Meigs and Pepper[2] say:

"Heat is one of the most influential of these causes. Improper diet is another frequent cause of choleraic disease in hot weather. Sudden weaning, a change in the character of the artificial food, the use of unwholesome milk and imprudences relative to food with unhygienic conditions are some of the other factors mentioned by them."

They also quote from the Report on Epidemic Cholera to the Citizens' Association of New York in 1865, giving as the localizing causes of cholera: 1. Decaying organic matters, bone, hide, fat and offal houses, neglected stables, putrescent mud and filth. 2. Bad drainage, local dampness, malaria. 3. Obstructed sewers, filthy streets, gutters, stables, garbage and cesspools. 4. Water and beverages in any manner contaminated by putrescent organic matter, particularly by any soakage from privies. 5. Neglected privies and putrefying excrement. 6. Overcrowding and neglect of ventilation. Smith (J. Louis)[5] likens cholera infantum as identical with thermic fever (1896). Smith (Eustace)[3] in 1884 says:

"Diarrhea is especially a complaint of warm weather and summer heat and must be looked upon as a powerful predisposing cause of the disease. Injudicious feeding, bad drainage and the effluvium arising from decaying organic matter;"

are the principal causes of this complaint. Vogel[4] in his book, published in 1885, says that diarrhea attacks children in the first dentition, and older ones in the hot summer months, at the season of unripe fruits. Pediatricians of the present time are for the most part in the belief that the eiology of infectious diarrhea has some relation to bacterial invasion and secondarily to dietetic indiscretions and thermic disturbances.

However, it remained for some one to discover the type of organisms causing the said diarrhea, and Kendall, beginning in 1910, completed perhaps the most detailed work on this subject which we have received up to the present date. The summaries

*The above extract is the earliest expression that I could find relative to the etiological factors in infectious diarrhea of children. The Rotch Memorial Library of the Infants' Hospital and the Boston Medical Library were the ones used with reference to this work. The former is perhaps the most complete library on Pediatrics that we have in this country. s

and conclusions of said work will be given in the paragraphs to come. Hiss & Zinsser[6] give us a very complete history with reference to the streptococcus organisms and note the fundamental studies of Pasteur and Koch[7] in 1881 along this particular line. Streptococci referable to intestinal invasion belong to Group No. 1. *Streptococcus pyogencs* and to Group No. 5 *Streptococcus fccalis* as suggested by Andrews and Horder.[8] With reference to the *Streptococcus fccalis,* this type is found normally in the intestines; but becomes occasionally pathogenic. The second organism found in the stools of cases having infectious diarrhea was the *Bacillus aerogcnes capsulatus.* This organism was the first observed by Welch in 1892 and was considered as a normal inhabitant of the intestinal canal until further experimentation by Kendall and Smith. The third and principal organism isolated, in which was the causative agent of the greater number of cases during the past summer, was the *Bacillus dysenterii Flexner.* The *Bacillus dyscnterii* as the etiological agent in the epidemics of a bacillary form of dysentery was first isolated in Japan by Shiga[9] (1897), Flexner and Strong[10] (1898) discovered, in the Philippine Islands, another strain coming within this group! Again in 1902 Vedder and Duval[11] published articles in which they claimed a similarity for the various forms which had been described previously by Flexner and Shiga. In 1903 Hiss and Russell[12] also isolated a bacillus which in many ways resembled the one previously described by others. Since then, many other bacteriologists have found different strains of this *Bacillus dysenterii Flexner.* The writer has endeavored to give a brief history of the bacteriological flora which caused the dysentery of the past summer. In some the typhoid bacillus and the para-typhoid were recovered; but inasmuch as the cases were few and the finding not unusual, they have not been considered seriously. Williams[13] has perhaps given us the best description of the factors mentioned above. He states that summer diarrhea, particularly the acute form, is favored by congestion of tenements, lack of ventilation and unhygienic surroundings. Added to this, the summer temperature produces a diminished resistance on the part of the child which renders the one to differences of temperature and the risks of chilling at sundown. The question of food is a predisposing factor in summer diarrhea

and will be discussed by the writer at a time when he considers the relation of food to the final outcome of the cases herein represented.

The Bacteriological findings are the results of the untiring work of Dr. Carlon TenBroeck, the Bacteriologist of the Floating Hospital. It seems proper, therefore, that the summaries and conclusions by Kendall, Day and Bagg[14]; Kendall[15]; Kendall and Smith[16] should be cited in detail.

Review of Work on Dysentery (Bacteriological).

"In spite of the excessive and protracted heat of the past summer, the number of admissions and the severity of the cases was not above that of the previous summer. It is not justifiable, therefore, to assign extreme heat as the etiological factor in the causation of these summer diarrheas. Again, it is impossible in most cases to distinguish between improper feeding per se and improper feeding as a predisposing factor to bacterial infection.

"The microbic theory of disease is too firmly established to need further discussion. This year, however, it was shown that one or more organisms which hitherto would have been deemed sufficient to establish a satisfactory diagnosis, were repeatedly recovered from certain individuals in whom there was no suspicion or past history of infection. In a majority of these cases it would appear that these organisms occurred in the host as harmless saprophytes rather than as pathogens. Furthermore, the summer's observations show conclusively that the blood, pus and mucus, so common in intestinal infections in children, is not pathognomonic of any specific organism. Several cases, which prior to death were diagnosed as bacillary dysentery because of excessive amounts of blood, pus and mucus at autopsy showed no demonstrable lesions of the intestinal tract which would account for the blood and pus; indeed, the cause of death could not be ascertained either ante or post mortem.

"The universal experience of the past has been that the Flexner cases far outnumber the Shiga cases; last summer the Shiga cases exceeded in number the Flexner cases.

"In view of the fact that paratyphoid bacilli are somewhat widely distributed in nature, it is not surprised that they were met with in a number of the cases. It is impossible in the cases mentioned here to measure their etiological importance. It is interesting to note in this connection that the typhoid bacillus was not found in a single case.

"As for the streptococcus, which was found in such large numbers, the diagnosis was made in many of the cases by exclusion, no other significant organisms having been found. This does not mean that other organisms might not have furnished the conditions which enable the streptococci to increase abnormally. It would not be

justifiable, however, to exclude the streptococcus from the list of pathogenic bacteria, after taking into consideration those cases which showed such distinctive lesions at autopsy. Even during life, the organisms were recovered in a number of cases from urine drawn with sterile catheters.

"Our observations show that the gas bacillus causes trouble—some or even severe diarrhea in children, yet it is of itself rarely the cause of death.

"The occurrence of organisms of the mesentericus group has been discussed. Our findings are not extensive enough to warrant any specific statements. The same holds true for the various other organisms which have been mentioned.

"**Conclusions.**—The striking fact brought out by the summer's work is that in every case of infantile diarrhea studied (with the exception of the few fermentative diarrheas) there was a general conformity in bacterial type of the intestinal flora, which was uniformly proteolytic in character. This proteolytic flora forms a striking contrast to that of normal children of similar age, in which the putrefactive activities are minimal. Superimposed upon this proteolytic background various of the well known intestinal pathogens may stand out conspicuously. In the past the isolation of such organisms has sufficed to establish the diagnosis; it now appears that such is not necessarily the case, inasmuch as one or more of them may be present without the production of noteworthy symptoms. On the other hand, cases are met with in which these organisms cannot be found, yet show blood, pus and mucus in the stools, and severe toxemia. In these latter cases the flora has been found to be proteolytic in character."

The above was the work of Kendall, Day and Bagg.[14]

"Generally speaking, the summer of 1910 in Boston was one in which dysentery bacilli were prominent; fully 75% (39 out of 52 cases) were due to these organisms. Gas bacilli were found in six and streptococci in significant numbers in those remaining. Streptococci were also present in about 60% of the dysentery cases, probably as secondary or terminal invaders. The summer of 1911 was noteworthy as a 'Streptococcus' year; 78 out of a total of 146 cases studied harbored large numbers of these organisms. A few of these patients died of septicemia, or perforation followed by peritonitis, others showed sequelæ of streptococcus origin. Dysentery bacilli were found in 18 cases (three of these were classed as bacilli carriers) although they were repeatedly sought for in several stools from each patient. Gas bacilli were recovered repeatedly from 33. 1912 was a 'gas bacillus' year; these organisms appeared in unusually large numbers in 53 out of 135 cases examined. Dysentery bacilli were recovered from five cases, and streptococci from but six. That is to say, the very severe, acute summer diarrheas of bacterial

causation present a very constant syndrome consisting of prostration and fever associated with mucus, pus and, frequently blood in the movements. It is frequently very difficult to determine the organism causing the disease. Bacteriologically considered these cases are of varied etiology, caused by organisms of very unlike characteristics. One year the dysentery bacillus was the dominant type met with, a second year streptococci were conspicuous, while a third summer was noteworthy because of the great number of cases in which the gas bacillus was the prominent organism encountered. It should be stated that each of the above types were found each year; the striking feature is the shifting of the dominant organism from year to year."

The above is the observation of Kendall.[16]

II—METHOD OF WORK.

The month of August proved ideal in every respect for: (1) there were different variations in temperature; (2) all types of infectious diarrhea were portrayed, and a sufficient number to justify conclusions under the different lines of research. For convenience and also for thoroughness, it was thought preferable to divide the infectious diarrhea into three groups. Group 1 to contain the cases in which the etiological factor was the *Bacillus dysenterii* Flexner; Group No. 2, the causative factor being the *Bacillus welchii;* and Group 3, containing the cases with a mixed infection. The organisms found under the third group included: (a) *Bacilli welchii,* (b) *Bacilli paratyphoid,* (c) *Bacilli typhoid,* (d) *Streptococci.* Indeed the writer is glad he did so, because there were several negligible quantities made out, which would otherwise have been omitted. Each morning the bacteriologist would give me a list of new cases, namely, those which were suggestive from the clinical manifestations alone. I would, then, on the same day, begin the investigation from the hematological standpoint. Every other day a total white count and a differential would be made on the cases while in the acute stage. During the convalescent period, the blood would be examined not less than every fourth day. In this way I would study the case from the admission and would follow each one until the bacteriological evidences for our work would be negative for three successive examinations. During the period of research there were over fifty cases followed and the writer chose twenty-five of this number, because a great many of the remaining cases proved to be

other than infectious diarrhea, although clinically a number of them were thought to come within this group. The average number of blood pictures per case numbered not less than five, and not more than ten. Every day a visit in person to the individual cases would be made and notations recorded. One day out of each week the work for the previous six days would be recapitulated, and if it was felt more time was needed, the writer would take an additional half day. It is hoped that the facts obtained along this line will be the stimulus for additional work, for indeed the blood manifestations of dysentery has been in the past a wanting quantity.

III—THE CASES.

In considering these twenty-five cases the writer shall only endeavor to give in detail the present illnesses, and shall leave unsaid the past history unless there is a condition which would have some material result on the case in question.

GROUP NO. 1.

Case 1—Angelina L., aged seven months, of Italian parentage, was admitted to the B. F. H., July 27, 1914. She had been well up to one day prior to admission. The patient was breast fed until three days ago when modified milk was substituted.

Present Illness.—This child has always given a history of vomiting five minutes after each feeding, and during her illness this condition has not changed. On the whole she has never been a very strong child.

The dejections numbered two or three daily, large, yellowish green in color, watery in consistency, and foul in odor. Maximum temperature since admission, 101° to 102°; minimum temperature, 96° to 97°; pulse, maximum, 130 to 140; minimum, 100 to 110. Respiration, maximum, 34 to 40; minimum, 25 to 30.

Taking everything into consideration, it is not believed said child will recover, for she seems dreadfully prostrated and gives all the typical characteristics of a bacillary dysentery—of a rather severe type.

Case 2—George O'C. was admitted August 5, 1914, being ten months old. His prostration was perhaps the most marked in cases seen during my stay aboard the Floating Hospital. He lay practically lifeless and the only time he would give vent to his feelings was when one moved him; then he would utter a feeble cry. He was breast fed for one week only and since birth he has had various modifications of whole milk. He seemed to relish the food and gained somewhat in weight, although the formula given at the beginning was a trifle stronger than he should have received.

Present Illness. Perfectly well up to two weeks ago when he began vomiting, had fever and finally developed a diarrhea. The vomiting occurred one-half hour after meals and contained in quantity the amount of food taken previously. Fever lasted only one week. The diarrhea was mild at first, but became very severe, the dejections being small in quantity, green in color, watery in consistency, and containing mucus and curds.

Maximum temperature, 103° to 104°; minimum 101° to 102°. Maximum pulse, 140 to 150; minimum, 120 to 130. Maximum respiration, 50 to 60; minimum, 35 to 40.

This child is a type of the most severe form in which the toxic symptoms are greatly exaggerated and few if any recover; therefore the prognosis is grave and it appears that this child will die.

Case No. 3—Lester O'C, twin brother of Case No. 2, was admitted two days prior to his brother. He displayed practically the same clinical picture described for his brother with the single exception that the toxic symptoms were slightly less marked. He was breast fed for one week after which he was given an unknown modification of whole milk with barley water and this not agreeing with him, his parents resorted to feeding the child on barley water alone.

Present Illness. He began vomiting one week ago. The vomiting occurred immediately after the intake of food, was projectile in character and contained in quantity about three quarters of the food previously taken. He had a slight diarrhea, the dejections numbering from four to five daily, large in amount, green in color, foul in odor, and with few small, soft curds.

Temperature, maximum, 103° to 104°; minimum, 101° to 102°. Pulse, maximum 170 to 180; minimum 130 to 140. Respiration maximum, 40 to 45; minimum 25 to 30.

The picture, as noted from this case, sunken eyes, clear sclera, starey look, ruby red lips, flaccid skin, a degree of anemia and a lifeless form, can mean but one verdict, namely death.

Case No. 4—The parents of Richard S., eight months old, are of American birth and appear to be above the average in intelligence. Patient was breast fed for one and one-half months. He made no material gain on this food, so he was given a food consisting in the great part of sucrose, after which a barley flour gruel was substituted in alternate feedings; then oatmeal jelly was used, which finally gave way to Quaker Oats. The mother, thinking that the child was not gaining sufficiently, gave in addition to the last named food, a modification of whole milk.

Present Illness. The duration of his illness numbered six days. The initial symptoms were fever, marked prostration, diarrhea, the dejections numbering twenty, green in color, water in consistency foul in odor and containing curds, blood and mucus.

Temperature, maximum 104° to 105°; minimum, 99° to 100°.

Pulse, maximum 160 to 170; minimum, 110 to 120. Respiration, maximum, 50 to 60; minimum, 30 to 25.

Although there have been remissions of temperature and a slight improvement in the general condition, the persistence of a large number of dejections containing blood, pus and mucus, with a high temperature, despite scientific treatment, tend to make the probabilities of recovery very meagre. The chances are against his getting well.

Case No. 5—Mary D. was taken sick two months prior to her entrance to the B. F. H., which was August 7, 1914. She is eighteen months of age and her parents are Americans. Mary nursed for ten months, then was given the proper milk modification and continued to thrive until two months before admission.

Present Illness. Her present condition dates back indefinitely to about two months ago, when she began to have a very marked diarrhea, which at times would become less severe, and at other times would have marked exacerbations. Her real illness began August 4, 1914, when her mother noticed that in addition to having severe dejections, numbering eight daily, which showed mucus, curds, a watery consistency, foul odor, there was also strong evidence of blood.

Temperature, maximum 100° to 101°; minimum, 98° to 99°. Pulse, maximum 150 to 160; minimum 120 to 160. Respiration, maximum 35 to 40; minimum 20 to 25.

Mary seems to be quite sick but the very fact that she has been ill for some time, that her temperature is not very excessive, and that her tout ensemble is good, makes one give her a favorable prognosis.

Case No. 6—Born of American parentage, Louise P, aged 21 months, was admitted to the B. F. H. August 3, 1914. The patient was breast fed for fifteen months, followed by whole milk, potato, bread, soup, ice cream and cracker three times daily.

Present Illness. Her sickness was ushered in by diarrhea, fever and a fair degree of prostration five days before admittance to the hospital. Her fever was rather low and she vomited occasionally. The dejections numbered seven to eight, green in color, consistency soft, odor foul, and containing blood, pus and mucus. Since her initial attack she has received whole milk.

Temperature, maximum 102° to 103°; minimum, 99° to 100°. Pulse, maximum 130 to 140; minimum 90 to 100. Respiration, maximum 40 to 45; minimum, 25 to 30.

Patient gives signs of a rather progressive type of infection with slight resistance and a virulent organism. Temperature, though not very high, is persistent and coupled with this is an accelerated pulse and an increased and irregular respiration. Her condition is becoming worse (although her dejections are improving). However, one

cannot consider the whole satisfactory, and no doubt she will succumb to the illness.

Case No. 7—Born in Louisiana, of American parentage, Sylvia S., 19 months old, was brought to the hospital July 29, 1914, in a very precarious condition. Her past history is that she was fed at the breast three months, followed with Eskay's food which was continued for seven months, she was then given modified cow's milk, gradually increasing to whole milk at ten months of age. Added to her diet were gruels of various sorts, bread, rice and wheat.

Present Illness—Her present condition dates back seven days. The initial symptoms were fever, diarrhea but no vomiting. The dejections were few in number, of watery consistency, foul odor, containing blood and mucus. The patient showed a slight degree of prostration.

Temperature, maximum 101° to 102°; minimum, 98° to 99°. Pulse, maximum 130 to 140; minimum, 110 to 120. Respiration, maximum 40 to 45, minimum 25 to 30.

The case of Sylvia presents a somewhat different picture from those previously cited. Her condition became progressively better, her stools less pathological, her temperature gradually receding, with pulse and respiration in accordance. This case will undoubtedly recover.

Case No. 8—Margaret Mc'D, seven months old, is of Irish ancestry. She was always healthy prior to her present illness, and had been breast fed during her entire life.

Present Illness—Margaret's sickness dates back two weeks. The first symptom was that of diarrhea, mild in character, green in color, watery in consistency, foul in odor, containing curds, blood and pus, vomiting twice during the interim. It might be well to state that since the beginning of her illness she has been taking small quantities of brandy with her food.

Temperature, maximum 101° to 102°; minimum, 98° to 99°. Pulse, maximum, 140 to 150; minimum, 90 to 100. Respiration, maximum, 45 to 50; minimum, 25 to 30.

The case of Margaret presents a very difficult type to prognosticate. She never seemed to be very ill. Her condition in every way was satisfactory excepting the persistence of the definite dysenteric stools. In fact we thought she would recover, when without any particular warning her temperature, pulse and respiration all became higher and she died shortly afterwards. The one point, namely, the inability to clear the stools perhaps might account for the continuance of absorption from the intestinal tract, other than this it is impossible to give the true status of her fatal termination.

Case No. 9—Louis R., twenty-one months of age, was of Italian parentage, and had always given a negative history. In fact this was the first time he had been really sick since birth. Although improperly fed from the start, he never gave any symptoms which

would be in accord with these facts. He was admitted to the B. F. H. August 16, 1914. For fifteen months in addition to breast feedings, he was given the ordinary table diet.

Present Illness. Thirteen days ago he first began to have diarrhea, some fever, and a mild coryza. The movements were twelve to fourteen in number, blackish green in color, soft consistency, foul odor and exhibiting curds, blood and mucus. Associated with this was an occasional convulsion which would last as long as twenty-four hours.

Temperature, maximum, 100° to 101°; minimum, 98° to 99°. Pulse, maximum, 120 to 130; minimum, 70 to 80. Respiration, maximum, 35 to 40; minimum, 20 to 25.

Louis has never appeared to be very ill, in fact he has had practically no fever, his pulse and respiration have been normal and his stools, though they have occasionally contained pus, blood and mucus, have been few in number, and coupled with this he has had the desire to sit up in bed and interest himself in surrounding things. This is no doubt a mild infection and in all probabilities he will recover.

Case No. 10—Joseph G., aged ten months, born of Italian parents, was brought to our institution August 16, 1914. He had never received breast milk, and the foods given him show marked variation indeed. Condensed milk and various milk-station formulas were tried and on the whole seemed inconsistent with proper nourishment.

Present Illness. For two and one-half days he has had slight fever and diarrhea and has vomited everything taken. The diarrhea is rather severe, the movements numbering twelve, the color yellowish green, the consistency watery, and odor foul, but containing no curds, blood, pus or mucus.

Temperature, maximum, 104° to 105°; minimum, 99° to 100°. Pulse, maximum, 180 to 190; minimum, 110 to 120. Respiration, maximum, 110 to 120; minimum, 25 to 30.

This case is again one of the severe type. The persistence of a very high temperature in an almost pulseless child, with a marked respiratory acceleration, indeed makes the prognosis very grave. In addition we note no clearing up of the stools, for he has exhibited a typical dysentery movement, the chances are undoubtedly against him. It does not seem as though he can possibly recover.

Case No. 11—James L. was indeed a splendid specimen of an infant when brought to the hospital August 10, 1914. The patient is sixteen months old and of American parents, and was breast fed for the greater part of his life, with eggs and light food in addition at about twelve months of age. He seemed to thrive very well on the varied diet he received.

Present Illness. He has been sick but three days, his complaint being diarrhea and vomiting with a slight degree of fever. The vomiting numbering ten to twelve daily, being immediately after

feedings. The movements occur every ten minutes, greenish in color, watery in consistency, foul in odor, showing few small curds, with a trace of blood and mucus.

Temperature, maximum, 102° to 103°; minimum, 98° to 99°. Pulse, maximum, 150 to 160; minimum, 90 to 100. Respiration, maximum 40 to 45; minimum, 20 to 25.

For a long time recovery seemed doubtful but on the ninth day of his hospital life his temperature dropped to normal, his facial expression became brighter and the other dysentery manifestations became nil. Therefore his resistance must have been excellent for the amount of temperature he had and for his quick response to the infection. In truth, he was a doubtful case.

Case No. 12—John F., aged eight and one-half months, is of Italian parentage, was admitted August 7, 1914. He had always been healthy up to the present attack. His dietetic history is not very definite but as far as could be learned he has received modified milk from birth.

Present Illness. Diarrhea with a slight degree of vomiting and fever began eight days ago. The vomiting did not persist, although diarrhea has become progressively worse. The dejections numbered fifteen to twenty-five, large in number, green in color, watery in consistency and foul in odor. There was blood in stools for three days, although mucus has been present since the onset of the illness.

Temperature, maximum, 100° to 101°; minimum, 97° to 98°. Pulse, maximum, 140 to 150; minimum, 80 to 90. Respiration, maximum, 50 to 60; minimum, 20 to 25.

This boy has had indeed a very mild infection, although his resistance is not what one might have expected, providing his previous life had been in accordance with modern ideas. However, his temperature, except for the first two days, has varied between 98 and 99. His pulse has always been strong, although a bit accelerated, and respiration has not been more than one would expect under the given conditions. Looking at him, though small in stature and frail in constitution, he does not impress me as a very sick child, and his chances are favorable for recovery.

Case No. 13—William D., aged eleven months, American parentage, was first admitted August 1, 1914. This is perhaps one of the most complete cases collected by me, and a detailed history of said case will be given in a paragraph to come. He was breast fed up to one month ago, since that time having received condensed milk with crackers and bread twice a day.

Present Illness. He has been under the weather for about two weeks. The initial onset was instituted with vomiting, diarrhea and some fever. The movements numbered ten, color green, consistency watery, odor foul, some curds, and for the past four days mucus has been noticed in the stool.

Temperature, maximum, 101° to 102°; minimum, 97° to 98°.

Pulse, maximum, 140 to 150; minimum, 80 to 90. Respiration, maximum, 50 to 60; minimum, 20 to 25.

This case typifies a marked infection with a low virulence, and on the other hand, a great resistance. With the exception of one day his temperature has not gone above 100°. The pulse was somewhat accelerated, and the respiration was more affected than any other noticeable symptom. His case has never seemed really serious, and at all times the child has been rather fortunate in escaping the marked emaciation as prevalent with these conditions. This case never seemed doubtful, and its recovery will be uneventful.

Case No. 14.—Daniel M. was one of many children in the same household who were attacked simultaneously with dysentery. He is four years and three months old, of Irish parentage, and was admitted on August 25, 1914. His dietary procedure in the past was from an unreliable source, but the facts gained showed that he has been fed previously on modifications of whole milk and proprietary foods, and that he had had but a few months of breast feeding. His food at the present time consists of the house diet.

Present Illness. For one week he had been suffering with diarrhea and fever, and at the onset he had one attack of vomiting. The diarrhea perhaps has been the most marked factor of his illness, for the movements numbered from ten to twenty and were of a very greenish color, of a watery consistency, having a nauseating odor, and showing a very large amount of blood, mucus and hard large curds.

Temperature, maximum, 101° to 102°; minimum, 99° to 100°. Pulse, maximum, 110 to 120; minimum, 90 to 100. Respiration, maximum, 25 to 30; minimum, 20 to 25.

Although Daniel M. has a marked infection with a rather high temperature and some prostration, the very fact that his pulse and respiration are about par, that his stools have diminished in number, and that his whole appearance is fair, and taking into consideration his age, recovery, although a great way off, will undoubtedly be the finale.

Case No. 15.—Salvatore I, of Italian parentage, eighteen months old, was admitted August 12, 1914. He was breast fed for an indefinite period and then was given soft foods and occasionally the house diet.

Present Illness. His condition dates back but four days, the initial attack being accompanied by diarrhea, some fever, but no vomiting. The diarrhea is severe with ten to fifteen movements, green in color, foul in odor, showing blood and mucus.

Temperature, maximum, 99° to 100°; minimum, 98° to 99°. Pulse, maximum, 140 to 150; minimum, 100 to 110. Respiration, maximum, 45 to 50; minimum, 25 to 30.

This is another example of a rather marked infection in which the

patient displays no degree of toxemia, and although languid, and slightly emaciated, and fretful, these cases do not as a rule end disastrously, but on the contrary, recovery seems assured and the type might be classified with the mild form.

Case No. 16.—Mark K., aged six, of Irish parentage, was admitted August 17, 1914. She had been breast fed for five weeks, followed by Horlick's Malted Milk.

Present Illness. The duration of the illness was three days, the temperature being 101 with a slight degree of prostration. Vomiting took place at the onset of the illness, and was somewhat projectile after feeding, the character of food being unchanged. The dejections numbered fifteen, the color being green, watery in consistency, foul in odor, showing curds, blood and mucus.

Temperature, maximum, 105° to 106°; minimum, 101° to 102°. Pulse, maximum, 160 to 170; minimum, 120 to 130. Respiration, maximum, 60 to 70; minimum, 15 to 20.

The severe grade of toxemia is the type which rarely overcomes the infection, and succumbs in the majority of cases. It is unusual that a child with a temperature of 105° to 106° and with a greatly accelerated pulse, irregular respiration, and a continuance of diarrhea in this acute form, recovers. This picture can have but one outcome, and that an unfavorable one.

The above sixteen cases are those included under Group No. 1, the etiological factor being the **Bacillus dysenterii Flexner.**

GROUP NO. 2.

Case No. 17—Born of Italian parents, Rose M., 17 months old, came to our hospital August 11, 1914. She was breast fed for seven months, after which she received in addition the ordinary house diet. Since eleven months her food has consisted of the house diet alone.

Present Illness. The child has been sick for one week. The chief complaints from the start were fever and diarrhea, four days after the initial attack she began vomiting and up to the present time has continued at irregular intervals, following the administration of food. The diarrhea consisted of from eight to ten movements, green in color, foul in odor, with a few white soft curds, blood, pus and mucus.

Temperature, maximum, 99° to 100°; minimum, 97° to 98°. Pulse, maximum, 120 to 130; minimum, 70 to 80. Respiration, maximum, 60 to 70; minimum, 20 to 25.

This case can be classified as a mild form of infectious diarrhea. She has demonstrated but little reaction, for the fact is that her temperature, with one day's exception, has never exceeded 99. The patient's pulse and respiration, while irregular at times, have kept within the limits of a normal individual of her age. Her condition

has become progressively better and one feels assured she will recover.

Case No. 18—Catherine O'N, aged five months, who was admitted August 20, 1914, has been breast fed since birth.

Present Illness. Three days prior to admittance she became ill, her movements were watery in consistency, green, slimy, containing mucus and numbering twelve.

Temperature, maximum, 99° to 100°; minimum, 96° to 97°. Pulse, maximum, 120 to 130; minimum, 90 to 100. Respiration, maximum, 50 to 60; minimum, 25 to 30.

Catherine has never seemed to be very much depressed. While she gives evidence of having lost in weight, the clinical picture of her long illness is absent. Taking into consideration her chart the prognosis is favorable for her recovery.

Case No. 19—Rita G., eight months of age, of American parentage, has always been a fairly well baby. At first she was breast fed, for one month, followed by Mellin's food and whole milk. Later on, bread and other soft materials were added to her diet.

Present Illness. Patient has been slightly under the weather for three weeks prior to admittance. Vomiting and diarrhea of a very mild character have been present for three weeks, but assumed a very severe nature three days ago. With this, fever has persisted. Her dejections are from ten to fourteen, watery, foul in odor, containing mucus and a few curds, and five days ago there was evidence of blood.

Temperature, maximum, 100° to 101°; minimum, 97° to 98°. Pulse, maximum, 140 to 150; minimum, 100 to 110. Respiration, maximum, 45 to 50; minimum, 20 to 25. One found a marked degree of emaciation in this patient; the very fact that she has been ill for a period of three weeks would necessarily account for her weakened condition. On the other hand, her temperature has not been very constant and she has responded splendidly to treatment, so that the outlook in this case seems to indicate a favorable termination.

Case No. 20.—Admitted to the B. F. H. August 24, 1914, Thomas McE. of Irish parents was breast fed two months, followed by modified milk and this in turn by condensed milk.

Present Illness. His present condition dates back two weeks, having had fever and diarrhea. The latter includes a typical dysenteric stool.

Temperature, maximum, 103° to 104°; minimum, 98° to 99°. Pulse, maximum, 120 to 130; minimum, 90 to 100. Respiration, maximum, 35 to 40; minimum, 25 to 30.

This case represents an infection of the most severe type. The patient's temperature has been rapidly increasing with a weakened pulse and shallow respiration. It is very questionable whether he will recover, because he has been ill for a period of two weeks with

a very poor reaction by the body as indicated by the temperature at this time.

Case No. 21.—John B., of Slavonian parents, is six months old and was admitted to the institution the 21st day of August, 1914. His past history is a very indefinite one. All facts obtainable seem to point to his having been raised in a very poor environment. He has been fed alternately since birth on breast and modified milk.

Present Illness. He had never been ill until two weeks ago when he began to have all the signs of the so-called summer diarrhea. He has had a great number of stools which have contained the ordinary constituence of blood, mucus and pus.

Temperature, maximum, 104° to 105°; minimum, 99° to 100°. Pulse, maximum, 150 to 160; minimum, 90 to 100. Respiration, maximum, 50 to 60; minimum, 30 to 35.

John B. is a very sick child. Perhaps no one case has demonstrated to me the picture often described in textbooks of the severe action which a virulent bacteria can cause. The child is almost lifeless. All osteological prominences can be seen and great loss in weight can be noted; the typical facies often depicted is readily made out. The constantly increasing high temperature with correspondence in the pulse and respiration mean sure death. From the few cases seen and from those described by other members of the staff, it is the unforeseen that occurs when a child of this type recovers.

The above five cases have as the etiological factor the **Bacillus Welchii.**

GROUP NO. 3.

Case No. 22.—Always considered a healthy child, Alfred A., aged seven months, was born of American parents. Although he only had breast milk one week his mother had endeavored to feed him according to instructions. Unfortunately he had only taken condensed milk and though not frequently ill, his resistance therefore has been much modified.

Temperature, maximum, 100° to 101°; minimum, 98° to 99°. Pulse, maximum, 140 to 150; minimum, 90 to 100. Respiration, maximum, 50 to 60; minimum, 25 to 30.

This case presents no difficulty in assuring one of the outcome. He never seemed to be very ill and recovery appears assured.

Case No. 23.—Born of French parents, Ellen B., two months of age, was admitted to the B. F. H. August 9, 1914. Unfortunately she has never had breast milk, for since birth she has received malted milk and the mother has continued its usage.

Present Illness. For two days past she had spells of vomiting, eeach one being accompanied by a dejection. Her stools have displayed in part the signs of dysentery of a low grade form.

Temperature, maximum, 100° to 101°; minimum, 97° to 98°.

Pulse, maximum, 130 to 140; minimum, 90 to 100. Respiration, maximum 40 to 45; minimum, 25 to 30.

Ellen was prostrated upon admittance and for a number of days her recovery seemed doubtful. However, after she had been with us for one week, her temperature hovered around normal and with one exception has remained so until now. A severe toxemia seemed to be wanting for she has lost but little in weight.

Case No. 24.—Carry A., six months old, of Italian parentage, was admitted August 7, 1914. Her past history is very indefinite from the fact that her parents cannot speak English and the few notes obtained were through an interpreter. She had been sick ten days. Dietetic treatment has been a varied one, consisting of breast milk and soft diet during early life.

Present Illness. Her present condition was inaugurated by vomiting, fever and dysentery some ten days ago. The frequency of vomiting had relation to being twenty-five minutees after the intake of each feeding. The dejections though few in number, have contained curds, mucus; but no blood or pus have been noted.

Temperature, maximum, 101° to 102°; minimum, 98° to 99°. Pulse, maximum, 150 to 160; minimum, 80 to 90. Respiration, maximum, 50 to 60; minimum, 25 to 30.

This case presents but one interesting feature and that is the irregularity of the respiration. In this respect alone her condition has been doubtful as to the final outcome. On the other hand, she has never had a really marked reaction and perhaps this interesting fact is due to a complication. Her recovery seems sure.

Case No. 25.—John S. is of English-American parents and is thirteen months of age. He was admitted to the hospital August 19, 1914, and has never been breast fed but raised entirely on modified milk and condensed milk, occasionally having barley water with lactose solution in combination; recently crackers, eggs, etc., have been added to his diet.

Present Illness. Sickness dates back two days, having a mild expression of dysentery.

Temperature, maximum, 99° to 100°; minimum, 96° to 97°. Pulse, maximum, 130 to 140; minimum, 90 to 100. Respiration, maximum, 40 to 45; minimum, 25 to 30.

John S. gave us some cause for worry, for the evidence of a subnormal temperature was rather unfavorable. This condition always indicates a very poor chance for the individual, for it either means a lack of resistance, or a lowered vitality, caused by a lengthy previous illness. It is hoped, however, that he might react, although his chances are unfavorable.

IV—CLINICAL MANIFESTATIONS.

A—AGE.

The limits as obtained from the charts are as follows:—

Group No. 1—Flexner—1 case 6 months; 2 cases 7 months;

1 case 8 months; 1 case 8½ months; 3 cases 10 months; 1 case 11 months; 1 case 16 months; 2 cases 18 months; 1 case 19 months; 2 cases 21 months; 1 case 51 months.

Group No. 2—Welchii—1 case 5 months; 1 case 6 months; 1 case 8 months; 1 case 12 months; 1 case 17 months.

Group No. 3—Mixed—1 case 2 months; 1 case 6 months; 1 case 7 months; 1 case 13 months.

Total Number of Cases—1 case 2 months; 1 case 5 months; 3 cases 6 months; 3 cases 7 months; 2 cases 8 months; 1 case 8½ months; 3 cases 10 months; 1 case 11 months; 1 case 12 months; 1 case 13 months; 1 case 16 months; 1 case 17 months; 2 cases 18 months; 1 case 19 months; 2 cases 21 months; 1 case 51 months.

All cases considered were under four and one-half years of age, the limits being two months on one hand and fifty-one months on the other. Sixteen cases (64%) were under one year. Eight cases, (34%) between one and two years. One case (2%) over four years. Under six months two recovered and two died. Between six months and twelve months four recovered and eight died. Under twelve months six recovered and ten died. Between twelve and eighteen months, two recovered and none died. Between eighteen and twenty-four months, five survived and one departed. Between one and two years, one recovered and one died, therefore under six months of age the percentage for recovery and death were the same, namely, 50%. Between six and twelve months, 33% recovered and 66% died. Under one year, 27½% recovered and 62½% died. Between twelve and eighteen months, all recovered. From eighteen to twenty-four months, 83% recovered and 17% died. In the interval between twelve and twenty-four months, 87% recovered and 13% died. So we see the greatest death rate occurs under one year of age, particularly so between six and twelve months. On the whole, there were ten (84%) out of the total of twelve deaths in the series which died under twelve months of age. The total white count in children of one year and over averaged from six hundred to one thousand higher than in the cases under one year of age.

B—SEX.

Group No. 1, male 10; female 6. *Group No.* 2, male 2; female 3. *Group No.* 3, male 2; female 2.

Total Number of Cases—Male 14; female 11.

One observes several facts relative to sex. Some unimportant, others seemingly important. In this series, fourteen were male and eleven were female; of the fourteen, seven or 50% recovered and seven or 50% died; of the female, eleven in number, six or 55% recovered and five or 45% died. However, unknown complications might have caused the somewhat greater percentage in the case with the boys, for in studying the fever charts of the girls, there were only three cases that had temperature of 101°, one 102° and one 105°. In other words, five or 45% out of eleven cases. In the case of the boys, two had 101°, two had 102°, one had 103°, three had 104°, one had 205°, or nine (65%) out of 14 cases had high temperature. It appears, therefore, that there is some significant factor in this regard.

	Male		Female	
	Recovered	Died	Recovered	Died
Flexner	6	4	2	4
Welchii	0	2	2	1
Mixed	1	1	2	0
Total	7	7	6	5

TOTAL

	Recovered	Died
Male	7	7
Female	6	5
Total	13	12

C—NATIONALITIES.

Group No. 1—Italian, 5; Irish-American, 5; American, 6.

Group No. 2—Italian, 1; Irish-American, 3; Slavonian, 1.

Group No. 3—American, 2; Italian, 1; French 1.

Total: Irish-American, 8; American, 8; Italian, 7; Slavonian, 1; French, 1.

It occurred to me that perhaps the previous environments in these cases might in some way have influences on the final outcome. In consideration thereof, the Italian children on the one hand have been contrasted with the American and Irish-American on the other hand. Unfortunately there were only two children of other nationalities, so when making comparison, these cases will be omitted. Peculiarly enough, the Italian children all

came from the slums in the vicinity of Battery Street, dark, poorly ventilated, dirty congested homes; in fact, one might picture a typical tenement home as described by social workers. The other children, as a rule, lived in localities where environments were superior in every respect. Despite these facts, more of the Italian children recovered in proportion than did the children of the other group. Of the seven cases of the former, five recovered and two died; of the latter, seven recovered and nine died. Thence the question:—Does environment play a role in these cases?

D—PREVIOUS FOOD.

Group No. 1—Case	Age	Breast Fed	Modified Milk	Condensed Milk	Cereals	Soft Food	House Diet	Proprietary Food
1	7 Mos.	Since birth						
2	10 "	1 week	6¾ mos.					
3	10 "	1 week	6¾ mos.					
4	8 "	1½ Mos.	6½ mos.			+		
5	18 "	10 Mos.	8 mos.					
6	21 "	15 Mos.	6 mos.			+		
7	19 "	3 Mos.			+			+
8	7 "	Since birth						
9	21 "	Questionable				+		
10	10 "		+	+ (10 mo.)				
11	16 "	Questionable				Eggs since birth		
12	8½ "		Since birth					
13	11 "	10 Mos.		+		Crackers		
14	51 "	Questionable	+			+		+
15	18 "	Since birth				Since 6 mos. bananas, etc.		
16	6 "	5 weeks					Since 4 mos.	
Group No. 2—								
17	17 "	7 Mos.						
18	5 "	5 Mos.						
19	8 "	1 Mo.						+
20	12 "	2 Mos.	+					
21	6 "	Since birth	Since birth					
Group No. 3—								
22	7 "	1 week		+				
23	2 "		Since birth					
24	6 "	Questionable	+					
25	13 "			Since birth				

D—PREVIOUS FOOD.

	No. Cases	Cases in %	Death %
Breast Fed Alone	5	20	16
Breast Fed + Modified Milk	6	24	20
Breast Fed + Condensed Milk	2	8	0
Breast Fed + Proprietary Food	3	12	4
Breast Fed + House Diet	4	4	0
Modified Milk Alone	2	8	0
Modified Milk + Condensed Milk	1	4	4
Condensed Milk Alone	1	4	4
Questionable Diet	4	16	0

The inferences drawn from the above data are indeed singular and interesting. Just the reverse of what we should have naturally expected happened. The children who had taken breast milk alone, prior to entrance, did not display the resistance anticipated, for four out of five died. Those who had taken both the breast milk and a modified milk had a similar ending. Five out of the six cases did not rally and finally succumbed. Those who received breast milk and proprietary compounds faired somewhat better, and strange enough, the child who was allowed indiscretions of the house diet in connection with the breast milk did not die. Therefore, to summarize, 83% or 10 cases which had received breast milk alone, or with other foods, died. Of the eight cases who were taking different diets, questionable ones at that, only 17% or 2 cases died.

The question which now confronts us is whether the source of infection is other from what we have thought in the past, namely, from previous food, particularly milk? The writer, while acknowledging milk is perhaps the one food which causes the greatest number of infections to be transmitted to infants, still he feels that there is a contagion which has been previously omitted by others than of the Boston School. Right here, it might be well to mention that precautions analagous to those of typhoid are practiced by pediatricians in this locality. Further work on this subject will be discussed at length by the bacteriologist of the Boston Floating Hospital, who is now in preparation of a very interesting paper on this subject.

E—DURATION OF ILLNESS.

Duration of Illness Prior to Admission.		Duration of Illness After Admission.	
Cases	Days	Cases	Days
Group 1.		**Group 1.**	
1	1	2	2
1	2½	2	2
4	3	1	7
1	4	1	11
1	6	4	13
3	7	3	14
1	8	1	16
1	13	1	20
3	14	1	21
		1	30
Group 2.		**Group 2.**	
2	3	1	6
1	7	1	10
2	14	1	11
		1	12
		1	21
Group 3.		**Group 3.**	
1	7	1	10
1	10	1	20
1	14	2	21
1	21		
Total.		**Total.**	
1	1	2	2
1	2½	2	2
6	3	1	6
1	4	1	7
1	6	2	10
5	7	2	11
1	8	1	12
1	10	4	13
1	13	3	14
6	14	1	16
1	21	2	20
		4	21
		1	30

F—TOTAL DURATION OF ILLNESS.

Group No. 1			
Case	Duration	Total	
1	1 day		
2	14 days	Cases	Duration
2	16 "	1	11 days
1	17 "	1	13 "
1	18 "	2	14 "
2	20 "	2	16 "
1	21 "	2	17 "
2	23 "	2	18 "
1	26 "	3	20 "
1	29 "	1	21 "
1	44 "	2	23 "
Group No. 2		2	26 "
1	13 "	1	29 "
1	18 "	1	30 "
1	20 "	1	35 "
1	26 "	1	42 "
1	45 "	1	44 "
Group No. 3		1	45 "
1	17 "	Average	23 days
1	30 "		
1	35 "	Case No. 5 omitted.	
1	42 "		

Of the number that died, 77% succumbed under twenty days, and the remaining 23% died between twenty-one and twenty-six days. Of those that recovered, 27% were sick under twenty days, 28% between twenty-one and thirty days, 18% between thirty and forty days and 28% between forty and fifty days.

Conclusions—Most cases that live twenty days or over with this infection, recover. Rarely so under twenty days. Those cases that died, the demise occurred before twenty days and a few cases extended to a twenty-six-day duration.

F—Facies—The picture which children suffering from this ailment present is indeed typical. A drawn expression, a stary look, sunken eyes, a clear and shiny sclera, combined with a pallor contrasted with ruby red lips, gives you the picture as was seen by me in a great number of the cases.

G—VOMITING.

Vomiting is indeed one of the main symptoms accompanying Infectious Diarrhea. As a rule it, in combination with the diar-

rhea, features the initial symptoms. For the most part the projectile type is wanting. However, two cases in this series gave a history of said type. The vomiting was present in twenty-one out of the twenty-five cases. It may occur immediately after the intake of food, or at periods varying from fifteen minutes to one hour thereafter. The quantity vomited is usually proportional to the intensity of the attack, viz:—the more toxic the infection the greater will be the periods of vomiting. In the majority of cases, the food is not retained for any length of time and the quantity taken in and given up have a direct relation to one another. The color of the vomitus is sometimes tinged with green, due to presence of bile, but as a rule is generally colorless, curdy in consistency, acrid in effect, having an odor varying from an acid-like character to one with no evidence at all.

H—DIARRHEA.

Dejections.—The dejections do not show any one manifestation that would be pathognomonic for any particular infection. Sometimes in the diarrhea of those children affected with the *Bacilli Welchii* this type might display a sort of puffed appearance, and by passing a level plane over this mass, one might note the peculiar feeling. The color as a rule varies from a reddish green, on one hand, to a brownish green on the other hand, depending, of course, on the amount of blood present and the part of the intestines from which the blood oozes. As a rule the stool is green, unless previous modifications of bismuth-salts have been given; this, of course, would modify the color. The size is proportional to the number in twenty-four hours, and inasmuch as there are numerous dejections, the individual passage will be small. The reaction is always acid except if the dietetic factor at the start should be protein, then the reaction would be alkaline, or slightly acid. The dejections are irregularly formed, showing undigested food and other pathological manifestations. Before entrance the maximum number of stools were twenty-five, the minimum one; after entrance, the maximum ten, the minimum none. Before entrance two cases had fifteen plus dejections, sixteen had ten plus and seven had five plus. Of the five plus cases, three of them died. After admission two cases had ten plus, twenty had five plus and three

had five plus. These, of course, refer to the number in twenty-four hours. The average number of dejections before admission were nine, and after admittance were four. The conclusions drawn are that an Infectious Diarrhea which is not attended with a great number of stools at the start as a rule will prove fatal in the majority of cases. On the other hand, dejections numbering from fifteen to twenty-five responded better to treatment and recovered in the great majority of cases. Blood. pus and mucus are a a rule associated with a stool of Infectious Diarrhea.

Dejections: Blood alone, 0; blood with mucus, 10; blood with pus, 0; blood with mucus and pus, 10; pus alone, 0; pus with mucus, 2; pus with blood, 0; pus with blood and mucus, 10; mucus alone, 3; mucus with blood, 10; mucus with pus, 2; mucus with pus and blood, 10.

Summary: Blood, 80%; blood and mucus, 40%; blood with mucus and pus, 40%; pus, 48%; pus with mucus, 8%; pus with mucus and blood, 40%; mucus, 100%; mucus alone, 12%; mucus with blood, 40%; mucus with pus, 8%; mucus with pus and blood, 40%.

I—WEIGHT AND EMACIATION.

Weight.—The weights were recorded in eighteen out of twenty-five cases. The greatest loss in one day was one pound and seven ounces; in two days, two pounds and six ounces; in all, ten cases showed a loss, seven a gain and one remained stationary. These weights, of course, refer to the first weight at entrance, and to the last weight when they are discharged. Of those that gained in weight the limits were from two and one-half to forty-eight ounces; the average gain being thirteen ounces. Strange enough to record, three of those that gained finally succumbed to the illness. Those in which there were a decrease in weight, the limits were one to twenty ounces, the average loss being eleven ounces, six recovered and four died.

Emaciation.—This idea is best expressed by the great loss in weight and of the severe grade of anemia that these little children are subjected to. In other words, there is perhaps no other one condition in which there is such a pronounced emaciation in a given duration of time.

J—NEUROLOGICAL FINDINGS.

The most marked symptoms within this group are extreme restlessness, twitchings (severity controlled by toxicity of infection) and loss of reflexes. Their sense of feeling is greatly reduced, whether this being due to the state of coma to which these severe cases aspire, or on the other hand due to some inhibition of the peripheral nerve endings, is indeed a conclusion hard to make.

K—TEMPERATURE.

The temperature curve in Infectious Diarrhea is indeed a variable one.

First Week of Illness—The temperature ascends gradually, reaching as a rule the maximum by the 5-7th day, although occasionally the maximum will not be reached before the beginning of the second week, with a morning remission and an evening rise during the entire fever period.

Second Week of Illness—The maximum temperature reached is usually from one to one and one-half degrees, less than that of the first week.

Third Week of Illness—Temperature rarely exceeds on hundred degrees and most often records in the neighborhood of ninety-nine plus.

Fourth Week of Illness—The greater part, the patient is free from fever, occasionally a slight rise not exceeding ninety-nine and one-half may be recorded for one day. This is due to some indiscretion which is not to be considered a part of the real curve.

The maximum temperature of one hundred and three degrees plus, means the prophecy of death. In other cases where we have an initial temperature of one hundred and five degrees plus and this is followed by a fall of two to three degrees, such cases, for the most part, terminate fatally anyway. In trying to determine whether there was any direct relation between the temperature and the pulse as contrasted in typhoid fever, the following are the conclusions obtained:—

Group No. 1—(Example) Age ten months, temperature one hundred and four and one-half degrees, pulse one hundred and twenty. If the pulse be taken when the child is crying, and this is the case in the majority of instances, of course the rate will be much greater; but on the other hand, if it is taken when

the child is at rest, as a rule you will get a high temperature and a low pulse, very similar to that of typhoid.

Group No. 2—The conclusions obtained from this group vary markedly to that of the former (Example) Age seven months, temperature one hundred degrees, pulse one hundred and fifty. This typifies a peculiar combination, namely, a rather low temperature and a greatly accelerated pulse.

Group No. 3—The cases under this group simulate those accorded under the previous one, with the exception that the pulse is more greatly accelerated, particularly if the mixed infection contained both the *Bacilli Welchii* and Streptococci.

Fever is one of the symptoms on which we can base a certain amount of prognostication. The limits were 100° to 106+°. All cases which had a temperature of 104+° died and a few of those that had 102+° succumbed.

DURATION—HOSPITAL

No. of cases	Number of days with fever	Percent cases	Percent died
1	20	4	0
1	19	4	0
1	17	4	0
1	15	4	0
4	14	16	8
2	13	8	0
1	12	4	4
2	11	8	8
1	10	4	0
1	9	4	4
1	8	4	0
4	6	16	16
1	5	4	0
1	4	4	4
1	3	4	0
1	2	4	4
1	1	4	4
Summary—			
1	20	4	0
3	15	12	0
10	10	40	5
7	5	28	4
4	1	16	3

Each patient averaged ten days of fever while in hospital.

No. of Cases	Percent of time in hospital
9	100
2	90
2	80
1	70
5	60
2	50
2	40
0	30
1	20
1	10

Summary

No. of Cases	Pct. of time in hospital	No. died
14	70	9
7	50	3
2	30	0
2	10	0

No. of cases	Temperature	Percent of total number	Percnt died
1	106°+	4	4
2	105°+	8	8
4	104°+	16	16
2	103°+	8	4
6	102°+	24	12
7	101°+	28	0
3	100°+	12	4
Summary—			
7	104°+	28	28
8	102°+	32	16
10	100°+	40	4

L—RESPIRATION.

The respiration cannot be considered a suitable guide for the prognosis of recovery in the individual case. In the severe toxic cases, when there is an increase and also where there is an irregularity, these cases as a rule have a fatal termination.

No. of cases	Respiration	% of cases	% died
1	120+	4	4
2	70+	8	4
8	60+	32	16
3	50+	12	4
6	45+	24	12
4	40+	16	8
1	30+	4	0
Summary—			
	70+	12	8
	50+	44	16
	30+	44	24

M—PULSE.

M—Pulse.—The pulse varied in rate from 190+ to 120+ per minute. The rhythm simulates regularity excepting just prior to death, when then become thready and irregular. The arteries are very easily compressed and the size and shape of the pulse wave very small. The tension as a rule being fair.

No. of cases	Rate	Percent of total cases	Percent died
1	190+	4	4
1	180+	4	4
3	170+	12	8
3	160+	12	4
7	150+	28	8
5	140+	20	16
4	130+	16	4
1	120+	4	0
Summary—			
	170+	20	16
	150+	40	12
	120+	40	20

Greatest 140-150.

V—CLASSIFICATION.

After a careful survey of the cases in question, the writer has endeavored to classify them from a bacteriological basis.* Remember this refers only to those which have been seen in person.

Infectious Diarrhea
- 1—Toxic
  - (A) Flexner
    - (a) Severe
    - (b) Moderate
    - (c) Mild
- 2—Non-Toxic
  - (B) Welchii
    - (a) Severe
    - (b) Moderate
    - (c) Mild
  - (C) Mixed
    - (c) Mild

(A) *Severe*—Marked prostration, coma, great loss in weight, ruby lips, temperature 103°—, persisting, dejections ten to twenty-five daily on the one hand or two to four on the other hand and unable to retain by mouth any food whatsoever.

(B) *Moderate*—The above symptoms slightly less severe, with a temperature of not over 103° and a remitting one. Few dejections in this type is a rare case.

*From a bacteriological standpoint as exhibited August, 1914.

(C) *Mild*—No coma, slight prostration, weight remains about same, no apparent neurological symptoms, no perceptible loss of interest in surroundings, environments and temperature rarely reaching 101.

(B and C) (a). The symptoms in this division resemble the other severe cases in the toxic group in every respect excepting as follows:—The coma is not as a rule as well marked and prostration does not seem to be at all proportional to the temperature and infection. The amount of fever is generally higher, practically in the mixed infection where the *Bacilli Welchii* is one of the organisms.

(b) *Moderate Cases*—These differ from the severe cases only in regard to the temperature being lower, with slight prostration and the omission of any nervous symptom.

(c) *Mild Cases*—This sub-division represents a very peculiar collection of facts. The child appears to be slightly under the weather; is, however, interested in the surroundings, and if old enough will talk, sit up in bed and do many things respective of age. Diarrhea is a constant symptom, though the loss in weight is not as great as the number of dejections would lead one to believe. The bacterial manifestation is present and one finds them in almost every examination of the stool. They have practically no abnormalities with respect to temperature, pulse or respiration; in other words, if it were not for the diarrhea, you could hardly consider the child ill. It, however, might be the forerunner of the other two types.

Cases		R.	D.	
Toxic	Severe Nos. 2D*, 3D, 4D, 10D, 16 D	0	5	
	Moderate Nos. 11R, 14R, 2D, 5R, 6D, 7R, 8D	4	3	
	Mild Nos. 9R, 12R, 13R, 15R	4	0	8-8
				0
Non-Toxic	Severe Nos. 20D, 21D	0	2	
	Moderate Nos. 22R, 19R	2	0	
	Mild Nos 25D, 17R, 18c, 23R, 24R	3	2	
				5- 4
				13-12

*D-Dead R-Recover.

It would seem therefore that all the severe types died; the chances are in favor of the moderate cases and recovery is practically always assured in the mild cases.

VI—MORTALITY.

Mortality in these series is perhaps greater than one would expect to find. Of the twenty-five cases, thirteen recovered and twelve died. Of the number that died, more than half of the children were brought to the hospital after they had been sick for a period of time varying from one to four weeks in duration. It must also be noted that the past has proven that the greatest number of deaths among those having Infectious Diarrhea occurred in the month of August. A detailed account with reference to age is discussed at length in a previous paragraph.

VII—RELATION—TEMPERATURE, FOOD AND BACTERIA.

Clinicians of to-day agree that there is an intimate relation between temperature, food and bacteria as the etiological factors in infectious diarrhea. Some believe that previous illness with lowered resistance, plus indiscretion of diet, act as predisposing causes and bacteria act as the exciting cause. This deduction to me seems to be the most logical. The question concerning previous food, and particularly with reference to milk, is indeed an important one. Considering the facts that children who have had breast milk alone, or breast milk in the greater part during the first year of life, have died in a greater number of cases than those having had previously a diet of different other foods, the question arises as to the manner in which the child receives infection for we are forced to acknowledge that the infection is contracted in more than one way. It appears, therefore, the probability of contagion of infectious diarrhea with particular attention to that form caused by *Bacillus dysenterii* Flexner is almost analagous to the contagion Enteric fever.

VIII—SUMMARY.*

1. *Bacilli dysenterii* Flexner was the organism found in the majority of cases during the past summer of 1914, aboard the Boston Floating Hospital, *Bacilli welchii, Streptococci, Bacilli typhoid* and *paratyphoid* were also found.

2. Age—Sixteen out of twenty-five cases were under one

*A complete summary may be found under each topic previously discussed.

year of age, eight cases between one and two years and only one over twenty-four months. The younger the child the more grave is the prognosis, for under one year 62½% died and 37½% recovered. Ten out of the total of twelve deaths were recorded under twelve months of age.

3. Sex—There was slight predominance of the male over the female, being fourteen of the former and eleven of the latter.

4. Nationalities—The resistance of the Italian children is superior to the other nationalities affected. The children of the Irish-American, American and Italian parentage were the ones forming the large group who had infectious diarrhea.

5. Previous Food—Ten of the twelve children who died were those who had been previously fed on breast milk alone or in combination.

6. Duration of Illness—The average illness lasted twenty-three days. Most cases that lived twenty days or over, recovered; rarely so under twenty days. Those cases that died, the demise occurred as a rule before twenty days.

7. Facies—All cases in which one could note ruby red lips, contrasted with the anemia, proved fatal.

8. Vomiting—The vomiting was present in twenty-one out of twenty-five cases.

9. Diarrhea—Blood was seen in 80% of the cases, pus in 48% of the cases and mucus was noted in all the cases.

10. Weight—Of eighteen cases where the weights were recorded, the greatest loss in one day was one pound and seven ounces; in two days, was two pounds and six ounces.

11. Temperature—Each patient averaged ten days of fever while in the hospital. The limit of maximum temperatures lay between 106° and 100°. All cases that had a temperature of 104 degrees plus, died.

12. Respiration—The maximum respiration varied from thirty to seventy per minute and all cases that did not recover had a respiration of thirty plus.

13. Pulse—The pulse varied from 120 plus to 190 plus per minute. The rate of 160 plus generally an omen of an unfavorable outcome.*

*Pulse—A noticeable fact is the consideration of a slow pulse with a high temperature in the cases caused by the **Bacillus dysenterii** Flexner.

14. Classifications—The toxic cases were principally those caused by *Bacilli dysenterii*-Flexner; the non-toxic cases were those in which the etiological factor was *Bacilli welchii* and mixed infection. On this basis, temporary classifications are made.

15. Review—Hematology (Infectious Diarrhea)—There are no authentic data up to the present time on this important subject that the writer has been able to gather.†

16. Total Leucocytic Counts—With a fall of the temperature, there was a corresponding rise in the average total white count of each week. Cases of Group No. 1—Flexner manifest a leucopenia throughout the illness. Those of Group 2, Welch, show a leucocytosis, and those of Group 3—Mixed, a marked leucocytosis.

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†An original contribution by the writer on The Hematology of Infectious Diarrhea is now being published by the Boston Floating Hospital.

AN UNUSUAL INJURY OF THE PENIS WITH SUCCESSFUL REPAIR.*

By PAUL J. GELPI, A. M., M. D.,
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On the 28th of December, 1914, a colored boy, Alfred G., age 9, was admitted to W. 1, Charity Hospital, presenting a condition of unusual interest. His penis, at a point about half an inch in front of the pubis, was almost completely severed, just as though it had been done by a knife in a circular amputation of the organ. The skin was cut through all around, the cavernous bodies were almost completely divided (Diagram 1), and, below, the spongy body including the urethra was severed (Diagram 2). The dorsal vessels and those of the spongy body, as well as the central arteries of the cavernous bodies, were cut, and it looked as though the distal portion was hanging by a mere thread. The uncut segment of the penis measured less than three-eights of an inch across and less than a quarter of an inch in thickness. Edema of the pendulous part with phimosis was present to a marked degree, denoting to what extent the circulation was impaired.

We thought at first that it would be a useless task to attempt restoration, in view of the great impairment to the circulation. The impression among those who viewed the case was that nothing short of completing the amputation would avail. We leaned on the side of conservatism, and decided to try repair by gradual stages, with the result shown in the accompanying photographs.

The history of the case can be told in a few words. We quote from the history written by Dr. Dean, intern of our service:

"About 8 days before entering the hospital, patient was out playing with some other boys. One of his playmates tied a string around his penis. He forgot about it for the time being, and when he went home his penis was so swollen that he could not get it off. The child being afraid to tell his mother, the string remained around his penis for 8 days. He could pass his urine at first with difficulty only."

The boy gave me an entirely different version. He claimed to be subject to nocturnal incontinence. His father, not under-

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standing the nature of the condition, threatened to hang him if he would again wet the bed. In mortal dread, he decided to tie a string around his penis so as to avoid another accident and escape punishment. I mention this simply to show the difficulty in getting correct details. It would be interesting to know how long it took for the string to cut through the deep tissues, and also to ascertain the amount of hemorrhage and the time it took for the urethral fistula to form. Unfortunately such details could not be furnished by the boy, and it was only by persistent questioning that we were able to secure the meager information mentioned above.

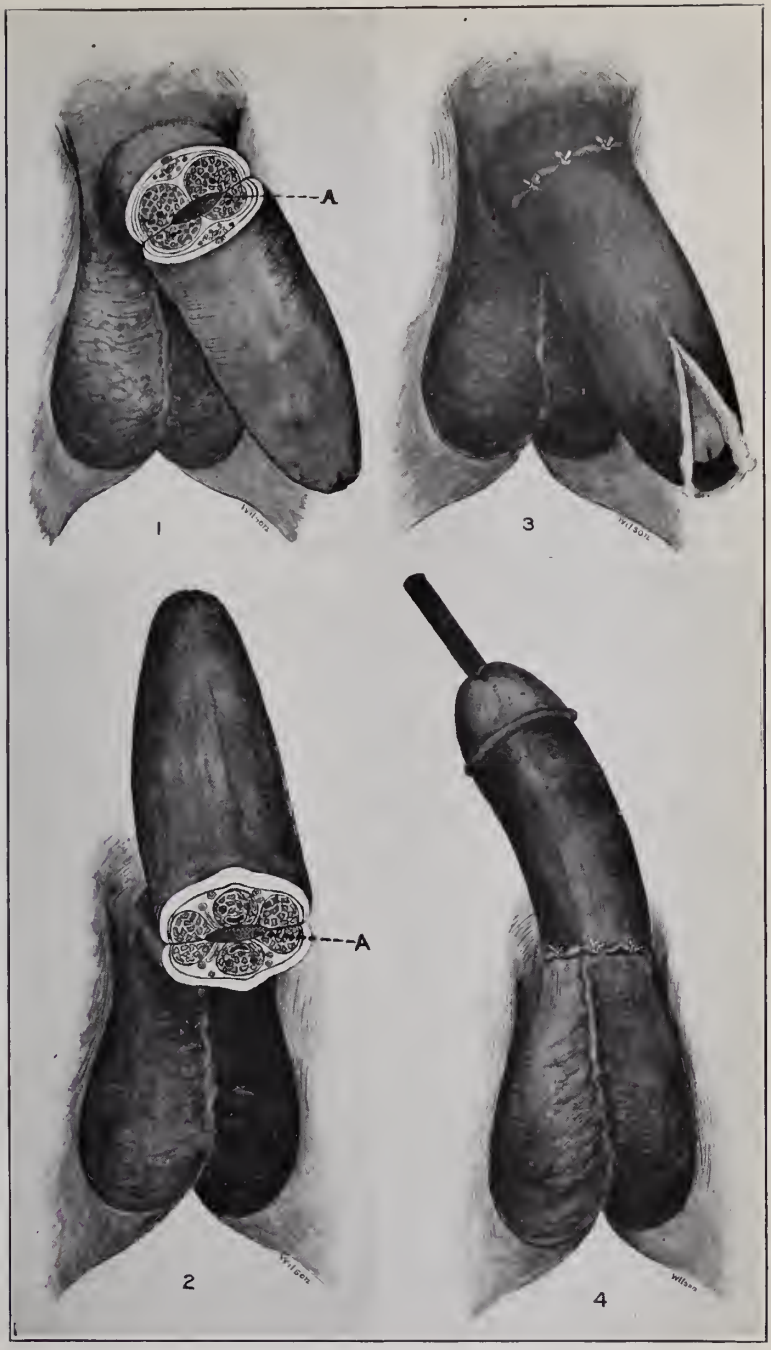
Oprative Procedures: December 29 a dorsal slit was made to relieve edema of the prepuce. This was done under local analgesia (novocain).

January 2, 1915. Partial penoraphy under local. Three catgut sutures passing through the skin and deeply through the cavernous bodies were placed so as to unite the dorsum. The result was fairly good and we were encouraged to proceed with the work.

January 19. Circumcision and urethroraphy, also penoraphy completed. The urethra was sutured over a catheter passed through the penis into the bladder. Sutures were placed to unite the spongy body and the portions of the cavernous bodies that were still separated. This gave promise of good union until the fourth day, when the patient pulled out the catheter. This caused the urethra and part of the spongy body to remain ununited. General anesthesia was used.

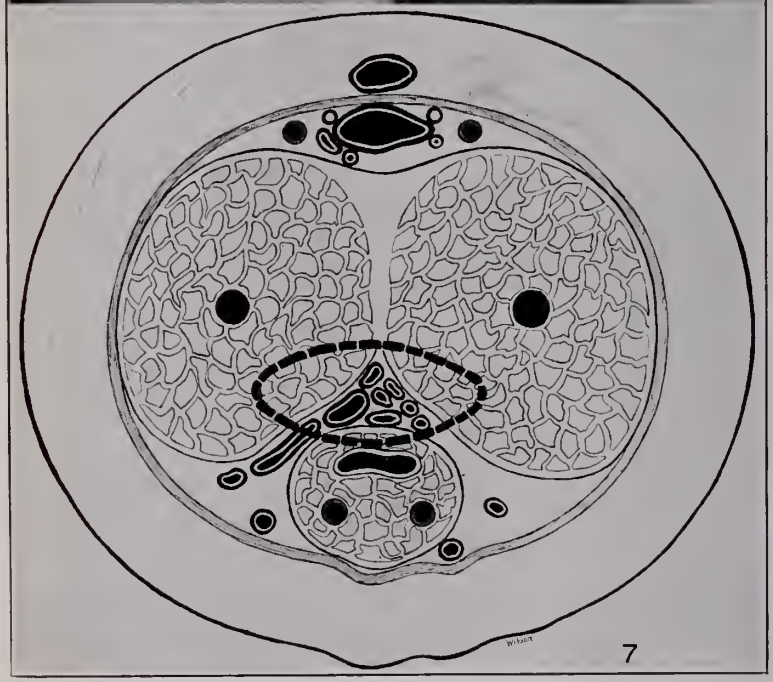
February 5. External urethrotomy and urethroraphy under ether anesthesia. In order to absolutely divert the urinary stream, we resorted to urethrotomy. Perineal drainage was established and the urethra was sutured over a second catheter passing through the penis and out through the perineal incision. The skin was sutured directly over this. We were again doomed to disappointment, for the occurrence of stitch abscesses prevented the union of the urethra.

February 24. External urethrotomy and urethroraphy under general anesthetic. Perineal drainage was established as before and the spongy body and urethra sutured. A piece of skin one-third of an inch was cut away from the distal side. The skin



1. Diagram showing section of cavernous bodies and dorsal vessels. A—uncut segment.
2. Section of spongy body and urethra. A—uncut segment.

Illustrating Paper of DR. P. J. GELPI.



5. Photo showing result of operation, anterior aspect.
6. Photo showing result of operation, posterior aspect.
7. Diagram of cross section of penis. Dotted line encircles only existing vascular supply at time of admission.

on the proximal side was dissected for a half inch, including a portion of the scrotum, and freshened. This was sutured to the new edge of skin above, so that the superficial line of sutures was on a higher level than the deeper one. A few days later, union was perfect except at one point on the right side where a pin-hole opening remained, through which the urine passed drop by drop. A catheter was introduced directly into the bladder and in a few days the perineal incision and the penile fistula were entirely healed.

This case demonstrates what perseverance will accomplish in plastic work. It shows also how we can restore parts even when the circulation has been impaired almost beyond hope. There are two points, however, which only the future can determine. One is whether erection will be perfect in the course of time and insure normal coitus; the other whether there will be stricture formation at the point where the urethra was brought together.

DISCUSSION OF DR. GELPI'S PAPER.

Dr. H. W. E. Walther: The two cases Dr. Gelpi has presented tonight are of particular interest to the genito-urinary surgeon. The method he employed in removing the giant calculus from the bladder, namely, by means of a hammer and chisel, I consider the most rational. The conservatism he practiced in the case of plastic operation upon the penis for an almost total traumatic amputation is also commendable. However as to the end result in this latter case, I do not think that the patient will ever experience complete erections in the distal portion of the penis, due to the deficient vascular and nerve supply to this part.

Dr. E. D. Martin: This case as reported by Dr. Gelpi is rather remarkable. I consider myself fortunate in having seen it, for one might think from the report that Dr. Gelpi had exaggerated the condition of the boy on admission to the hospital, but this would be almost impossible. The diagram shows quite clearly and quite accurately the true condition. But what is more, Dr. Gelpi not only preserved the penis, but later reestablished the continuity of the urethra, and in doing this adhered to a well recognized rule which I want to particularly emphasize here, and that is to cover over the point of union in the urethra as deeply as possible, and when possible to have the line of suture in the urethra as far as possible from the line in the skin flap. In the event, then, of a fistula it will close by granulation. To insure this result I now make it a practice in cases of hypospadias where the urethra has to be lengthened to bury the point of union well under the tissue. This is done by carrying

out the suggestion of Beck, by dissecting out the normal urethra for half an inch or more, and tunnelling well beyond the junction of the newly formed urethra; the catheter with the urethra attached is then drawn through the tunnel. This not only insures deep implantation of the new urethra but covers it entirely with vascular tissue; the skin is then closed over the raw surface. With this procedure I find that the entire operaion can be done in one or two operations, whereas formerly I have made as many as twenty attempts to close fistulæ. I am very glad Dr. Gelpi carried out this procedure and that he realizes its advantages.

Dr. Gelpi (in closing): In answer to Dr. Genella, I believe that had the case been treated immediately after the injury, repair would have been easier.

In answer to Dr. Walther, I am of the opinion that the chances for erection will depend on the condition of the circulation. From my experience with cases of partial amputation of the penis for epithelioma, I feel certain that there will be a possibility of coitus, for I have been assured by some of these patients that they were able to have pleasurable intercourse. The only question in doubt is whether erection will be perfect and coitus normal.

In answer to Dr. Martin, I do not know what became of the string that constricted the penis, as I only saw the case the day after admission to the hospital. I fully agree with him as to the best method of repairing the urethra. The urethral sutures and the skin sutures must be placed on a different level to prevent infection.

THE CLINICAL INTERPRETATION OF THE SERUM TESTS FOR TYPHOID AND FOR SYPHILIS.*

By S. CHAILE JAMISON, M. D., New Orleans.

I.

THE CLINICAL INTERPRETATION OF THE SERUM TESTS FOR TYPHOID.

There are two serum tests largely used for the diagnosis of typhoid fever—the Bass-Watkins macroscopical reaction and the Widal microscopical reaction. These reactions demonstrate merely the presence or absence of agglutinins for typhoid bacilli. The presence of agglutinins in the serum means that the patient either has or has had typhoid bacilli active in the body, and, of course, this activity usually results in the clinical condition known as typhoid fever; but typhoid bacilli may cause periostitis,

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parotitis, pyelitis or cholecystitis, in the latter case without the patient having had typhoid fever, and agglutinins thus may be caused to appear in the blood. At the present day the agglutinins for typhoid bacilli may be in the serum without the patient ever having had any disease due to typhoid bacilli, these agglutinins being produced by prophylactic typhoid vaccination.

A study of many hundreds of agglutination reactions performed in the senior laboratory of clinical microscopy at Tulane, during the past five years, leads me to believe that the agglutination reaction is usually distinctly positive some time between the 12th and 15th day of the disease; the Bass-Watkins becomes positive about two days later than the Widal, in my experience.

Park[1] gives the following figures:—

"About 20 per cent of typhoid infections give positive reactions in the first week; about 60 per cent in the second week; about 90 per cent in the fourth week, and about 75 per cent in the second month of the disease."

Certain patients may recover from typhoid fever without having developed agglutination reactions until convalescence, or may die from typhoid infection without ever having a positive reaction.

Although agglutinins play a minor role in immunity, there is good reason to believe that they are indicative of the other more important antibodies, and therefore may be of some importance in prognosis. The agglutination reactions last for weeks, months, or even years after an infection or vaccination; very rarely, however, for longer than about eighteen months. The absence of a positive reaction does not necessarily mean that a patient is not immune to typhoid infection.

General miliary tuberculosis, septicemia, and malignant endocarditis frequently affect the serum in such a way that it agglutinates typhoid bacilli. This is especially true of general miliary tuberculosis.

I believe that the following points are of especial importance in interpreting the reactions:

1. If a patient, at the first examination, has a negative Widal or Bass-Watkins, and subsequent examination reveals a positive reaction, this is conclusive evidence of an active typhoid infection.

2. The negative reaction does not mean that the patient has not typhoid fever; this is especially true if the examinations are made during the first two weeks of the disease (and this is the usual time for such examinations).

3. A positive reaction does not mean that the patient is suffering with an active typhoid infection.

4. "Faintly positive" and "doubtfully positive" reports are to be disregarded.

5. Agglutination occuring in dilutions of less than 1-100 should be disregarded; this is especially true when dried blood is used.

II.

THE CLINICAL INTERPRETATION OF THE SERUM TESTS FOR SYPHILIS.

There are two reactions generally used in the laboratories of New Orleans—the Wassermann and a modification of the Wassermann, erroneously called the Tschernogubow. Both of these reactions are tests for the presence of amboceptors against a lipoid substance produced by the activity of the *Treponema pallida* on certain tissues of the body.

A positive reaction is not to be expected in the first stage of syphilis. In the large majority of cases the reaction does not appear until about five days before the eruption on the skin; a positive Wassermann has appeared as early as five days after infection. Therefore a negative serum reaction means nothing in the first six weeks or two months of a syphilitic infection.

In all cases of untreated secondary syphilis the serum reactions should be positive. If the reactions are negative in a case supposed to be in the secondary stage, it is, in my opinion, the strongest single piece of evidence that the patient has not syphilis; and certainly, under such conditions, the diagnosis should be critically reviewed and the tests repeated several times. It is claimed that some slight treatment may bring out the serum reactions (the so-called provocative treatment); such cases have not occurred in my experience.

In tertiary syphilis the serum reactions are positive in only about 40% of cases. This is due, I believe, much more to the fact that these cases have had more or less thorough treatment than that the serum reactions tend to fade with the passage of

time. This view is borne out by the fact that the negro, who notoriously neglects treatment, gives a high per cent of positive reactions in the tertiary stage. Again, then, in this stage of syphilis a negative reaction has no significance, while a positive reaction is a strong link in the chain of evidence.

In tabes positive reactions occur in a little over 50% of the cases. In paresis the serum Wassermann should be positive in over 90% of cases. In cerebro-spinal syphilis we expect about 75% of cases to give positive serum reactions. In view of these figures, it is lucky that, so far as syphilis of the central nervous system is concerned, we have a far more accurate laboratory method, namely, the study of the cerebro-spinal fluid.

In congenital syphilis the Wassermann should always be positive, and as such a diagnosis is dependent principally on the serum reactions, this point is of importance.

I believe that a diagnosis of syphilis made on serum test alone, is open to very grave criticism; that the serum reactions are merely symptoms of syphilis, that are occasionally produced by other diseases and conditions.

Under the influence of treatment the serum reactions disappear according to the severity of the infection, the length of time of infection, and the energy with which the treatment is carried out. No case should be considered cured until the Wassermann or one of its modifications has been negative at six month intervals for two years.

DISCUSSION.

Dr. H. W. E. Walther: My experience with the Wassermann reaction has been very disappointing. In some instances I get a positive reaction report on one day and a week later I get a negative reaction report all on the same case, no treatment having been given in the interval. I think that we all must look upon the Wassermann merely as a link in the chain of diagnostic aids we now have for syphilis. There isn't a doubt but that the personal equation as to the man making the Wassermann must always be taken into consideration. A positive Wassermann certainly does not, in every instance, mean syphilis. Neither does a negative Wassermann mean that our patient hasn't syphilis. In my experience, in the out-patient genito-urinary service of Charity Hospital, I have found a marked variance in the reports of Wassermanns made. It is regrettable that we haven't a more accurate diagnosis for syphilis. I have almost abandoned the Luetin test in late syphilis because of its unreliability.

Dr. Paul J. Gelpi: I am particularly interested in the last part of Dr. Jamison's paper. I do not place so much reliance on the Wassermann test as I formerly did on account of the conflicting reports obtained. We frequently get a positive Wassermann and a negative Tschernogubow and vice versa. Now if, as we are told, the Tschernogubów is a more delicate test, why should we not have it positive when the Wassermann is so? I believe the Wassermann test of some value in determining the final cure. For instance, if a patient in the course of treatment has repeatedly given a positive Wassermann, and in the final test, after suspension of medication for 3 and 6 months, gives negative reactions, I consider it a definite cure. The Wassermann should only be entrusted to an experienced laboratory man.

Dr. J. A. Lanford: We should not forget that in both the Widal and Wassermann reactions we are looking for definite anti-bodies, the methods of demonstration being different. These anti-bodies are constantly being eliminated from the body in various ways and when they finally disappear from the blood stream we get a negative reaction. If there is a deep-seated focus of syphilitic infection and but few of the organisms are being killed off, stimulating the formation of anti-bodies in small amounts, these anti-bodies may be eliminated rather quickly, so that we may get a negative Wassermann following rather shortly after a positive one. Another fact to remember is that mercury will negative a positive Wassermann and alcohol taken internally in amounts of only 30 cc. will produce the same result. Therefor, it is no reflection on laboratory men or the Wassermann reaction when one finds at different times a positive or a negative reaction in the blood serum of the same patient.

The Wassermann reaction is a very valuable one and should be used in every case in which the diagnosis is at all obscure whether there is a history of syphilis or not. This is particularly important before surgical procedure. I recall two cases in which the testicle was removed and the lesion was afterwards found to be a gumma and a subsequent Wassermann reaction being positive. I also recall an unnecessary resection of intestine, the diagnosis before operation being malignancy.

I am rather inclined to believe that the Wassermann reaction is practically specific for syphilis as it has been our experience at the Touro Infirmary, where we have done between five and six thousand reactions during the past three years, that every blood serum giving a positive Wassermann reaction was from a patient suffering with some form of syphilis.

Dr. Randolph Lyons: I am very much interested in the paper read by Dr. Jamison, and agree with him that all the serum tests for typhoid and syphilis are subsidiary to clinical findings; however, an erroneous diagnosis is easily made in many cases, unless the dilu-

tion is as high as 1 to 50 in the Widal reaction. In my own work I use three dilutions, 1 to 10, 1 to 50 and 1 to 100. The value of the Widal is well brought out by Dr. Jamison. In my former work I found the blood culture and Widal responded in an inverse ratio in their results. The blood culture was most often positive early in the disease and the Widal later. In regard of the value of the serum test for syphilis, I have not been able to satisfy myself that the modified Wassermann reaction was more accurate than the original Wassermann. I have found the luetin test to be very valuable in some cases, especially so in cardio-renal cases, where the other tests for syphilis were negative. In view of the recent article of Sherrick, it will be necessary to review some of our positive reactions in order to discover whether they were taking iodine in any form.

INTESTINAL PARASITES IN SPANISH HONDURAS.*

By NATHAN BARLOW, M. D., Cuyamel, Honduras.

The inhabitants of the Central American countries are migratory in nature and pay little attention to political boundaries.

The natives of Honduras, Nicaragua, Salvador, and Guatemala were originally separated in the reports; but, as there was no appreciable difference in the percentages, they are combined in the statement below, which may be considered as fairly representative of this portion of the Caribbean coast.

METOZOA.

Method of Examinations—At least six coverglass preparations were examined in each case. Of the first one hundred cases, all those negative for hookworm were re-examined by Bass's centrifugal method, and were given thymol.

In only one were a few ova found, and in the same case two hookworms expelled after 75 grains of thymol. It therefore seems justifiable to assume the work to be accurate within 1%.

An additional check upon the presence of cestodes and flukes was afforded by examination of the movements after the administration of thymol, which usually removes at least a portion of any platyhelminths which are present.

The percentages were as follows:

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*Read before the Seventh Pan-American Medical Congress, San Francisco, California, June 19, 1915.

	Natives 800 cases.	Negroes 100 cases.	Whites 100 cases
Free from parasites.....	5.5	3.	27.
One species only.....	38.5	47.	29.
Two or more species.....	56.	50.	44.
Hookworm (*see notes).....	79.25	54.	20.
Trichuris trichuria.....	49.	47.	38.
Ascaris lumbricoides.....	44.5	40.	13.
Strongyloides intestinalis	2.5	10.	3
Taenia saginata	0.87	4.	3.
Oxyuris vermicularis			
Echinorhyncus (?).....			
Unidentified parasite.			

*NOTES.

Hookworm: Many examinations were made after thymol to determine the species. In one patient, a West Indian negro, *Ancylostoma duodenale* was found, and in another both Ancylostoma and Necator. All of the other infections were *Necator Americanus.*

Trichuris. No case of illness attributable to trichuris was encountered. Anemia was never found unless malaria or uncinariasis complicated the case. Moderate and heavy infections produce marked eosinophilia, and it is incredible that an influence profound enough to greatly alter the differential leucocyte count, has no deleterious effect upon the body. In these cases, a large number of the parasites may be removed by thymol, and occasionally the ova may be made to disappear. As with infections with N. Americanus, a preliminary dose of santonin and calomel increases the efficiency of the treatment.

Ascaris. In the tropics, ascaris lumbricoides is the cause of frequent cases of intestinal disturbance, slight fevers, neurasthenia, etc., which are entirely relieved by santonin. In children, convulsions are often encountered. In very young children, ascaris is a most serious complication of malaria, predisposing to convulsions and cerebral complications. In any case of malaria in young children, with grave nervous symptoms, there should be no delay in making an examination for ascaris.

Platyhelminths. *Taenia saginata* was the only platyhelminth encountered. A portion of the worm is usually removed by thymol. This should be followed as soon as possible, usually the second day, by male fern, 2 drachms for a healthy man taken during starvation. If the scolex is not removed, the kernels of two to four ounces of pumpkin seed should be eaten daily for the next week. All cases treated in this manner—seven in number—have been permanently cured.

Oxyuris. Only a few children were examined, and the prevalence of oxyuris cannot be definitely stated. It is not as common as in civilized countries.

Echinorhynchus (?). The investigation of this and the following parasite was too imperfect to be of much value, and they are only mentioned to make the report complete.

One very intelligent patient of the better class brought a few specimens of a parasite measuring 7 to 12 mm. in length, by 3 or 4 in breadth. The caudal extremity was pointed, very slightly curved dorsally. The surface smooth, without rings, and white. The anterior extremity shows macroscopically a black dot, which consists of the partly chitinized ring of hooks which surrounds the sucker-like mouth. The chitinous portion of the hooks is continued into the substance of a proboscis-like support for the mouth and, at the base, is surrounded by a ring-like muscle. Below this is what appears to be a sucking apparatus, terminating in an esophagus. The entire proboscis is retractible, forming a sheath by the invagination of the walls. When fully protruded, no sheath is visible.

The patient stated that on three separate occasions he had passed large numbers of these parasites. No ova of unknown form were found. The patient remained ten days in the hospital; was given male fern, thymol, santonin, betanaphthol, eucalyptol and chloroform, and granatum. No more of the parasites were removed, and there have been none since.

The patient was probably telling the truth, as he was willing to pay well for his treatment. He was also infected with necator, ascaris, trichuris and strongyloides.

Unidentified Parasite. From two patients ilving in the same house on the coast, there were removed by male fern a tæniform segmented parasite, having a head resembling the scolex of dibothrocephalus; but with a single sucker, communicating with an alimentary canal. Ova, having an aperculum, had been seen in both patients. The specimens when recovered were too fragile for further examination. They were probably accidental parasites.

PROTOZOA.

Method of Examinations—For the last year, every case presenting any abdominal symptoms whatever has been examined for protozoal parasites,—a saline being given in all but those who already had a diarrhea. In addition, the soft specimens obtained after the preliminary purge for thymol treatment were examined for protozoa, and the proportionate findings (almost nil) were added to those already obtained, and the results estimated in terms of the total population.

The following protozoa were found:

Endamoeba coli	0.1 %
Endamoeba histolytica	5.2 %
Craigia migrans	3.1 %

Craigia hominis	0.2 %
Vahlkampfia "pellucida"	2.2 %
Trichomonas intestinalis	0.1 %
Balantidium coli (variety)	0.06 %
Unidentified protozoon	0.06%
Unidentified amœbidæ	0.6 %

Endamœba coli. Over a year of most careful search for *E. coli* has made it evident that this parasite is very infrequent in Honduras. A large number of cases which at first suggested it, were, after further examination, found to be *E. histolytica.* In cases where *E. histolytica* is proven present, all forms, excepting cysts having more than four nuclei, and excepting also those having a limax type of nucleus, have been considered as *E. histolytica,* owing to the resemblance of the pre-cystic form to *E. coli.* It is probable that most of the unidentified amœbidæ were the pre-cystic form of *E. histolytica,* judging from the ratio of the recognized forms in the above table. The ordinary busy observer would undoubtedly consider pre-cystic *E. histolytica,* Vahlkampfia (in spite of the prominent ectoplasm), and Craigia, all as *E. coli.* It is evident that all reports as to the prevalence of *E. coli* in Central America must be accepted with caution, unless made by experienced observers.

Trichomonas intestinalis. This parasite is not indigenous to Honduras. All of the cases observed brought their infection from other countries. They all presented a mild diarrhea, with slight intestinal disturbance. The infection is readily removed with either methylene blue or ipecac.

Craigia, Vahlkampfia, and Balantidium are discussed in separate articles.

The Undetermined Protozoon is discussed with Vahlkampfia.

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DRUGLESS DOCTORS AND DOPE.

An amusing contention has developed from the enforcement of the Harrison Narcotic Law, and it would be much more diverting were it not for the tragic possibilities in the background.

The osteopaths have been trying to register and some have succeeded in registering in order to be permitted to administer legally opium and other narcotics, the use of which it is the intent of the United States Government to control strictly.

Now, the only basis upon which the osteopaths have claimed exemption from compliance with the laws regulating the practice of medicine, and the only excuse available for demanding

the formation by law of an examining board of their own, is that their manner of practice is essentially different, *that they do not administer drugs,* that their methods depend upon their great knowledge of anatomy and the scientific manipulations dependent thereupon. The term "drugless practitioners" is not one of opprobrium conferred by the old-fashioned doctor, but is one including the osteopath, the chiropractic, christian scientist, etc., etc., and selected by them and their adherents rather as a badge of distinction to denominate their being something new, something "different," a quality so highly prized nowadays.

So, we have the comical view of a set of "drugless" doctors fighting to be allowed to administer the most potent drugs, those so well recognized for their possibility for evil that a beneficent and paternal central government is making a serious effort to restrict their use to the most legitimate channels and purposes.

We say "fighting" advisedly. As with all important and new laws there is some confusion and has been vacillation on the part of some of the officials whose duty it is to interpret or to enforce the Harrison law. Some osteopaths were registered, others were refused; some of the former had their registration cancelled and there has been arguing back and forth. The latest decision in this state is of September 8, 1915, by the office of the Collector of Internal Revenue, based upon a revised interpretation announced by the Acting Commissioner of Internal Revenue issued from Washington under the date of July 23. This is worded as follows: "Osteopaths, therefore, should be permitted to register, provided they are registered as physicians or practitioners under the laws of the state, etc." An interpretation of this interpretation is a legal question which we shall not argue, at any rate for the present. It may well be left to be settled by the high legal authorities of the state, to which we understand it may be presented.

We need not, either, make more than a passing comment on the fact that the subjects upon which the osteopathic board examines applicants for license as osteopaths do not include *materia medica.* We do so merely to bring out the more glaringly the inconsistency of drugless practitioners who are not taught about drugs, are not examined upon their possible knowledge of such, who boast of not using them, yet are now fighting

for the right to administer them notwithstanding their own disclaimer.

Frequently, the regular profession, through its societies, including the American Medical Association, through its journals, through legislative committees, has proclaimed that the osteopaths were only masquerading as "drugless doctors," that their pretentions were simply a cloak under the protection of which they obtained the right to treat in a certain manner, only to slip into any and all kinds of practice without complying with the higher requirements enforced by the other boards of medical examiners. They are now convicting themselves out of their own mouths when they claim the right to register under the Harrison act and to administer the drugs included in the provisions of that law.

It is to laugh. Only one more ludicrous feature could be added to this absurd situation. It would be if our christian scientist friends, who so far have been more consistent, now came forward demanding the right to administer drugs for the relief of pain which they claim is non-existent.

THE SOUTHERN MEDICAL ASSOCIATION.

This year the Southern Medical Association meets at Dallas, Texas, and already a strong movement is afoot to make the gathering notable. This Association has grown rapidly since it expanded its scope and purposes so as to embrace all of the Southern States, and a successful meeting in Dallas and in Texas will mean that all of the Gulf States are concerned in the progress of the Association.

The usual absence of all but scientific and social features makes of these meetings a delightful congress of friends and the democratic administration precludes any suggestion of the politics and differences occasionally met with in other large bodies.

There should be an excellent program and we know how hospitable Texas can be, so all of our readers who are members should get ready for the meeting, and those who are not members should fall in line or should go to the meeting for inspiration.

Remember the dates---November 8, 9, 10 and 11, 1915.

UNREST.

The psychology of the world at this moment is rather difficult to interpret. A recent news item compares the great increase in suicides in the warring countries, and especially in Germany, France, England and Italy. The item states that Germany leads and the proportion of those who cannot stand the stress of the times is nearly fourfold the number in ordinary times.

Even in this country the reflex attendant upon the influences ramifying from the centers of war has occasioned depression reaching to the desire to end it all.

The unrest is universal and its extent impossible of calculation, for the uncertainty of any economic balance for a long time to come must challenge the intelligence of the wisest men and the best of counsellors.

The enormous expenditures in money and in lives cause the mind to stagger at the outlook when it will all be over—and, even at a cost of more than a quarter of a billion dollars a week, there is no end in sight.

The adjustment of human interests must come about, but it will need genius and human intelligence higher than the ordinary to grasp even the ends of the problems which necessity will lay on another generation.

The weaker minds must run to fear and it is no wonder that some of them lose their balance trying to weigh themselves in the struggle ahead. The ferment of unrest is not, then, unnatural; it must be anticipated and discounted.

Medical News Items

Orleanian Wars on Typhus.—Dr. W. B. Caldwell of New Orleans, who is hospital administrator for the Red Cross at Monastire, Southern Serbia, is given credit for splendid work in aiding to check the epidemic of typhus fever in that kingdom. In a report made public by the Red Cross, Dr. Caldwell tells of the terrible conditions that prevail in Serbia. He says that as many deaths are caused by starvation as by the disease. Dr.

Caldwell also did creditable work in the sanitary campaign on the Isthmus of Panama.

County Health Officer Finds Too Much Laxity in Filing Reports.—The laxity in filing reports with the State Board of Health office by various county health officers is causing complaint as indicated in a letter from County Health Officer Williams of Harrison County, Mississippi. In order to secure reports from the various physicians throughout the county, Dr Williams will likely prosecute physicians who violate the law by not having their reports in his office by the first of the month, the prescribed time.

Cancer Immunity Promised.—The Rockefeller Institute has announced, through the Academy of Science at Washington, a discovery by two of its investigators whereby immunity from cancer, it is hoped, may be obtained. The investigation was conducted by Drs. James B. Murphy and John J. Morton over a period of two years, with the result that in the white lymph cells of the blood there are the necessary factors in making animals immune from cancer. The physicians declare that a decided increase of the white lymph cells gives absolute immunity. In several mice treated with a serum of lymphoid tissue the number of white lymph cells in the animals almost doubled within a few days. It was also found that two kinds of animals and humans were immune from cancer—those naturally immune and those in whom immunity was induced through the previous injection of lymph tissue.

Says Clothing Infects Cattle.—At the fifty-first annual convention of the American Veterinary Medical Association, held in Oakland, Cal., last year's ravages of the foot and mouth disease were discussed. Dr. John R. Mohler, of the Federal Bureau of Animal Industry, stated that one out of every six cases of infection was brought about by virus carried upon the clothing of persons.

Dr. Maude Slye, University of Chicago medical research worker, who recently established the theory that cancer is inherited and not contagious as a result of ten years' experiments with mice, has been awarded the Howard Taylor Hicketts prize by the faculty of the university medical school.

Doctors End Term at Charity Hospital.—Dr. Adolph Ja-

cobs and Dr. W. F. Scott, respectively chief house surgeon and assistant at the Charity Hospital, ended their terms during the past month. Dr. Jacobs is succeeded by Dr. B. F. Gallant, of Kankakee, Ill., formerly superintendent of the State Insane Asylum. Both Dr. Jacobs and Dr. Scott are graduates of Tulane University and will practice their profession in New Orleans.

State Board of Health New Member.—Dr. E. M. Ellis, of Crowley, has been appointed to the Louisiana State Board of Health. Dr. Ellis was for many years health officer of Crowley.

Sanatorium Merger.—The Charlotte Sanatorium Company will in future operate the Charlotte Sanatorium, of Charlotte, N. C. Dr. Edward C. Register is president of the company and general manager of the sanatorium. The institution is well equipped and has an efficient staff.

Reciprocity Extended.—Indiana has been added to the list of states with which North Dakota reciprocates in the licensing of physicians. The North Dakota State Board of Health has established relations with Arkansas, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, South Dakota, Texas, Vermont, West Virginia and Wisconsin.

The National Association for the Study of Pellagra will hold its next triennial session at Columbia, S. C., October 20 and 21. Headquarters will be at the Jefferson Hotel.

The American Social Hygiene Association will hold its annual meeting in Boston, October 8, 1915.

Anti-Twilight Sleep Campaign.—According to report, the organization of an association to oppose the extension of the twilight sleep method is being planned by Mrs. Alice J. Olsen, of Brooklyn. It is her intention to interest wealthy women in an anti-twilight sleep campaign and raise money to circulate literature and rent a lecture hall in order to give the widest possible publicity to what she considers the facts regarding the Freiburg method.

Conference on Race Betterment.—The Second International Conference on Race Betterment was held at San Francisco, August 4-8, and was well attended. The Conference discussed race decadence, the possibilities of race improvement, and

the agencies of race betterment. Among the prominent speakers were: Luther Burbank, Dr. David Starr Jordan, of the Leland Stanford University; Dr. Ernest B. Hoag, of the Los Angeles Juvenile Court; Edgar L. Hewett, director of the United States Bureau of Ethnology; Prof. Irving Fisher, of Yale University; Paul B. Papenæ, editor of the *American Journal of Heredity*, and others. The conference was concluded with a Morality Mask, in which two hundred students of the University of California took part. This mask was a dramatic arraignment of disease and war.

The Sixth Annual Meeting of the American Association for Study and Prevention of Infant Mortality will be held in Philadelphia, November 10-12, 1915. The subjects to be discussed include: Eugenics; Effect of the Economic Standing of the Family on Infant Mortality; Infant Welfare Nursing in Small Cities, Towns and Rural Districts; Institutional Mortality; Midwifery Conditions and Treatment and Prevention of Respiratory Diseases. The sessions will be held under the chairmanship of the following: Dr. Wm. F. Snow, New York City; Dr. Chas. A. Fife, Philadelphia; Dr. Mary Sherwood, Baltimore; Mr. Sherman Kingsley, Chicago, and Miss Ella Phillips Crandall, New York City. Mr. Homer Folks, of New York, is president of the association, and Dr. S. McC. Hamill, of Philadelphia, president-elect for 1916.

Medical Education in China.—F. C. Yen, Changsha, China, gives an interesting history of the foundation of the Yale-Hunan Medical School in Changsha. The institution is the result of the joint efforts of Yale College and the native Chinese, and seems to have made an excellent start. Yen says the opportunity for shaping the future medical situation in China is superb and delay means permanent loss. The need of uniting all medical forces in establishing union medical schools in strategic centers should be utilized. Difficulties that were expected, such as the religious question, the question of control and technical matters, appointment of teachers and the language to be used in teaching, gave very little trouble, being met with by the Chinese in a liberal way. The one-time setback on account of the political changes, and the jealousy and self-interest of a small group of Chinese claiming to represent the medical pro-

fession of the province of Hunan, was effectively met by the Chinese members of the foundation and their friends, by the organization of the Hunan Ru'-chuen Educational Association, which can act as a technical intermediator between the government and Yale. As it is, Hunan-Yale represents a thorough and wholesale co-operation in medical education in China. *Jour. A. M. A.*

Free Medical Dispensaries in Milwaukee.—Under the Mathew Keenan endowment fund of about $300,000, free medical dispensaries will be established in Milwaukee as soon as the estate of the testator's widow has been settled in the county court.

New Health Rules to Be Taught in Philadelphia Schools.—A simplified course outlining the rules of health will be substituted for physiology now being taught in schools. The object is to determine not how much the children know, but how their knowledge in building up health bodies for themselves has been applied. The school board wants the boy and girl to know not only that fresh air and sunshine are good for them, but to prove it themselves in daily life.

Bequest to Infirmary.—By the will of the late Rosa Thompson, of Charleston, S. C., a bequest has been made to the Riverside Infirmary for the erection of an annex or the enlargement and remodeling of the present building.

Award of a Medal to Surgeon-General Blue.—The trustees of the American Medicine gold medal have unanimously selected Surgeon-General Rupert Blue as the recipient of this token. It is presented each year to the American physician who is adjudged to have done the most for humanity in medicine during the preceding twelve months.

American Medical Editors' Association.—The annual meeting of this association will be held at the McAlpin Hotel, New York City, on October 18 and 19. Dr. H. Edwin Lewis, editor of *American Medicine*, is president. An interesting program has been prepared and will be followed by a banquet at the McAlpin Hotel on the evening of October 19.

Cincinnati's New $4,000,000 Hospital has been opened. The hospital is situated on a tract of sixty-five acres of land in the suburbs of Mount Auburn and comprises twenty-seven build-

ings with forty-five wards. The equipment is complete down to toys for children and tennis courts for adult convalescents. A large park surrounding the buildings insures quiet and fresh air. A special hospital commission consumed four years in gathering all the good points of the most modern hospitals in America and four more years to build them into this most modern of institutions.

Loyola University Adds New Department.—A contract of affiliation was recently signed between Loyola University and the New Orleans Post-Graduate School of Medicine. Father A. E. Otis, president, and Father John J. Sherry, secretary, signed for the former, and Dr. Homer Dupuy, president, and Dr. Joseph A. Danna, secretary for the latter. After the end of its initial year the work of the school has been recognized by Loyola and the affiliation is the result.

Nation-Wide Campaign Against Fly.—The New York Association for the Improvement of the Condition of the Poor has started a nation-wide campaign against the house-fly. Hospitals, physicians, public libraries, so-called welfare associations and for the care of infants and children will receive data coverering a two-year study of the fly's part in bringing disease to infants. According to the association, it has been estimated, as a result of 18,000 observations, that almost twice as many infants become ill in homes where no screens are as in homes free from flies.

Birth Rate in Berlin Drops.—A Reuter dispatch from Rotterdam reports a 25 per cent decrease in the Berlin death rate for July over the same month in 1914. In July, 1914, the children born in the German capital numbered 3370, and in July, 1915, only 2520. The number of births for May, June and July of 1914 was 10,030, against 7523 for the same quarter this year.

Personals.—Dr. Alexis Carrel, of the Rockefeller Institute, New York, at present in the medical service of the French Government, will receive the next promotion to the rank of officer of the Legion of Honor.

Dr. and Mrs. Charles Chassaignac have returned, after spending a month's vacation on the Mississippi coast.

Among the New Orleans doctors who have returned from their vacations and resumed practice are: Dr. O. L. Pothier, Dr.

Louis Levy, Dr. Edmund Moss, Dr. George J. Taquino, Dr. F. W. Parham, Dr. J. J. Ryan, Dr. A. S. Yenni, Dr. George Tusson, Dr. J. Fred Dunn, Dr. T. R. Rudolf, Dr. J. Birney Guthrie, Dr. C. V. Unsworth, Dr. Joseph Conn, Dr. Edward S. Hatch and Dr. Sidney K. Simon.

Dr. N. Thiberge left during the month for a two weeks' visit to Dr. and Mrs. William Scheppegrell at their summer home, Orleans Park, near Hendersonville, N. C.

Dr. Joseph D. Martin has moved to Richmond, Va., where he will in future be located.

Dr. Louise Taylor Jones, of Washington, D. C., and Dr. Catherine H. Travis, of New Britain, Conn., have gone to Serbia, where they will establish a baby hospital.

Dr. George J. Taquino has been appointed assistant in the Ear, Nose and Throat Department, N. O. Polyclinic, vice Dr. J. D. Martin, resigned.

Removals.—Dr. R. D. Ferguson, from Fairfield, Fla., to Reddick, Fla.

Dr. C. K. Olivier, from 2922 Louisiana Avenue to 1903 Fourth Street, New Orleans.

Dr. Roland F. Hotard, from New Orleans to Orlando, Fla.

Dr. Caroline Mims, from 1229 Maison Blanche Building, to 203 Medical Building, New Orleans.

Married.—On August 17, 1915, at Yazoo City, Miss., Dr. J. F. Hunter, of Jackson, Miss., to Mrs. Adine Kennington.

On August 27, 1915, Dr. Julian Carr Hardy, of Lecompte, La., to Miss Hazel Beatrice Dodge, of Elk Rapids, Michigan.

On September 11, 1915, Dr. Oliver L. Brand, to Miss Emily Scally, both of Lafourche Crossing, La.

Died.—On September 5, 1915, Dr. L. B. Arceneaux, of Crowley, La.

On September 1, in Touro Infirmary, New Orleans, Dr. M. A. Rush, of Bay St. Louis, Miss.

On September 7, 1915, Dr. D. P. Albers, of New Orleans.

Publications Received

W. B. SAUNDERS COMPANY. Philadelphia and London, 1915.

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PAUL B. HOEBER. New York, 1915.

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Materia Medica and Prescription Writing, by Oscar W. Bethea, M. D., Ph. G., F. C. S.

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To-Morrow's Topics Series, by Morris, viz: A Surgeon's Philosophy, Doctors versus Folks, Microbes and Men.

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Orthopedic Surgery. Isaac A. Abt, M. D., and John Ridlon, A. M., M. D., with the collaboration of Charles A. Parker, M. D.

W. M. LEONARD. Boston, 1915.

A Synopsis of Medical Treatment, by George Cheever Shattuck, M. D.

P. BLAKISTONS SON & COMPANY.

A Manual of Surgery, by Francis T. Stewart, M. D. Fourth edition.

REBMAN COMPANY. New York, 1915.

A Text-Book of Histology, by Prof. Rudolph Krause.

Students' Text-Book of Hygiene, by W. James Wilson, M. D., D. Sc., D. P. H.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans for August, 1915.

Cause.	White	Colored	Total
Typhoid Fever	5	2	7
Intermittent Fever (Malarial Cachexia)	2	4	6
Smallpox	.....	.....	....
Measles	1	.....	1
Scarlet Fever	.....	.....	....
Whooping Cough	.....	.....	....
Diphtheria and Croup	5	5	10
Influenza	.....	.....	....
Cholera Nostras	.....	.....	....
Pyemia and Septicemia	1	.....	1
Tuberculosis	36	47	83
Syphilis	4	1	5
Cancer	18	9	27
Rheumatism and Gout	.....	.....	....
Diabetes	2	4	6
Alcoholism	.....	.....	....
Encephalitis and Meningitis	5	3	8
Locomotor Ataxia	.....	1	1
Congestion, Hemorrhage and Softening of Brain	14	8	22
Paralysis	4	2	6
Convulsions of Infancy	1	.....	1
Other Diseases of Infancy	14	12	26
Tetanus	.....	3	3
Other Nervous Diseases	3	1	4
Heart Diseases	41	43	84
Bronchitis	1	1	2
Pneumonia and Broncho-Pneumonia	17	17	34
Other Respiratory Diseases	2	.....	2
Ulcer of Stomach	.....	1	1
Other Diseases of the Stomach	4	4	8
Diarrhea, Dysentery and Enteritis	17	13	30
Hernia, Intestinal Obstruction	3	.....	3
Cirrhosis of Liver	8	.....	8
Other Diseases of the Liver	3	2	5
Simple Peritonitis	.....	.....	....
Appendicitis	6	2	8
Bright's Disease	18	14	32
Other Genito-Urinary Diseases	12	8	20
Puerperal Diseases	5	5	10
Senile Debility	3	.....	3
Suicide	4	1	5
Injuries	24	18	42
All Other Causes	17	20	37
Total	300	251	551

Still-born Children—White, 23; colored, 27. Total, 50.

Population of City (estimated)—White, 272,000; colored, 101,000. Total, 373,000.

Death Rate per 1000 per Annum for Month—White, 13.23; colored, 29.82. Total, 17.72. Non-residents excluded, 15.09.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure.....29.95
Mean temperature .....83.
Total precipitation ..... 7.22 inches
Prevailing direction of wind, southwest.

New Orleans Medical and Surgical Journal.

VOL. LXVIII. NOVEMBER, 1915. No. 5

Original Articles

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. A complimentary edition of one hundred reprints of his article will be furnished each contributor should he so desire. Covers for same, or any number of reprints, may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

SYMPOSIUM ON BLASTOMYCOSIS.

I.

ON THE BACTERIOLOGY AND PATHOLOGY OF THE BLASTOMYCOTIC INFECTIONS.*

By H. WINDSOR WADE, M. D.,

Instructor in Pathology and Bacteriology, School of Medicine, Tulane University, New Orleans.

It may be accepted as axiomatic that the appearance of a number of cases of any disease in a community in which it had previously seldom been recognized, stimulates the desire for information as to the nature of that disease. Since the condition known as blastomycosis has heretofore seldom been brought to the attention of the local profession, and since it is probable that instances of this disease have not infrequently been overlooked through a lack of familiarity with it, it is hoped that a discussion of its essential features will prove of interest and value to this Society.

*Read before the Orleans Parish Medical Society, July 26, 1915. [Received for Publication September 8, 1915.—Eds.]

Blastomycosis is a disease produced by an organism which belongs to the group of molds, though it is also related to the yeasts. In the body tissues it appears only as single, yeast-like cells, but when cultivated artificially the organism assumes much the appearance of an ordinary cottony mold. The infection, in the majority of instances, is confined to the skin, and the finding of a case of cutaneous blastomycosis is not unusual enough to occasion remark, at least in the practise of dermatology. In this connection, it is interesting to note that because of its primary isolation from cutaneous lesions the pathogenic blastomycete was originally named the blastomycete dermatitis.

The cases of systematic infection by this organism are much less frequent than the cutaneous, and until recent months the possibility of its occurrence has been largely overlooked in this community. The majority of cases reported in this country have been from the vicinity of Chicago, in fact the disease is sometimes spoken of as "Chicago disease." The medical profession there is on the watch for it, and probably the most of the cases occurring there are recognized. How many cases might be found in New Orleans at the present time is purely a question for speculation. It is significant, however, that at the Charity Hospital alone five cases have died within the past year. At least two other cases are known to have been found in the private practise of certain local physicians.

In a discussion of blastomycosis much emphasis should be laid on the difficulty of recognizing the condition clinically. Few diseases have so little individuality, and cases of this infection are usually diagnosed as tuberculosis, whether pulmonary or surgical or both.

This difficulty of diagnosis and confusion with tuberculosis is very well illustrated by the cases studied in the Pathological Department of the Charity Hospital. Of the five cases in this series, four were thought, by some at least, to have had pulmonary tuberculosis. One of these was diagnosed tuberculosis complicating pellagra. In this case the only skin lesion which was studied microscopically proved to be blastomycotic and the lung condition was apparently due to both the tubercle bacillus and the blastomycete. Another case on first admission had been diagnosed simply multiple subcutaneous abscesses. Later this patient returned with a supposed epithelioma of the face which on his-

tological examination was found to be blastomycosis. Still another patient was operated upon repeatedly for tuberculous abscesses and sinuses of the chest wall. After the sixth operation, a piece of tissue was sent to the laboratory for microscopic examination and the correct diagnosis was then established. These details are given solely for the purpose of emphasizing the fact that even advanced blastomycosis may not be recognized unless one is particularly on the lookout for it. Furthermore, the microscope is essential in determining the condition. This is indicated by the fact that in all of the above cases the correct diagnosis was first established in the laboratory.

Blastomycosis is peculiar in that the morphology of the causative organism in the tissues and exudates differs so markedly from the growth that occurs on culture media. The mature organisms as found in the lesions, whether of the skin or the deep organs, are firm-appearing, single cell-bodies, usually spherical in outline and possessing doubly contoured, highly refractile cell-membranes which vary in thickness and may at times be absent. The cell itself varies from the size of a leucocyte to twice this size or more. The membrane or shell which appears upon the sclerotic cells from tissue lesions is the striking feature of the organism when found in the fresh exudate. It is composed of a specialized material which resists the digestive action of antiformin or of 20% potassium hydroxid. These reagents applied to such materials as sputum, digest tissue cells and debris and render the search for the yeast cells more simple, making them stand out conspicuously in the background of debris.

Since there is nothing distinctive about the protoplasm, the yeast cells are usually recognized in stained sections of tissues by their capsules, which ordinarily appear as unstained halos. When, however, Mallory's anilin-blue connective tissue stain is used with Zenker-fixed tissues these membranes appear as beautifully clear, blue rings about red-stained, granular protoplasm. The apparent adantages of this stain have, it would seem, not been recognized by the majority of students of this disease.

Multiplication of the organisms in the tissue takes place by a budding process typical of yeast cells. At some point on the periphery of the mother cell a bulb or bud of protoplasm is slowly protruded and finally nipped off. The daughter cell which is usually smaller than its parent, develops a separate capsule and

leads an independent life. This process, at times with certain modifications, is apparently the only one by which this type of organism multiplies in the animal body. It is distinctly different from the mode by which reproduction occurs in the causal organism of the coccidioidal granuloma of the Pacific Coast. In that condition there appear more or less numerous secondary cells or spores within the bodies of the mother cell.

When the blastomycete is cultivated artificially the same strain of organism will show quite striking differences under various conditions of temperature, æration, moisture, etc. Quite typical, however, is the mycelial mode of growth, in which long, irregular strands develop, divided into cells by transverse walls or septa. These strands or threads by much interlacing and apparent branching give rise to a more or less downy, white growth, often spoken of as "cottony." Such growth of the organism is practically never seen in the animal tissues.

It would be out of place here to detail the many appearances which these organisms may assume under various conditions of cultivation. It has been asserted that all of the variations that have been described by various authors may be seen at one time or another in different cultures of the same strain. There is evidence, however, that not all of the strains isolated from essentially similar clinical cases are alike. It seems probable, therefore, that a number of more or less closely related molds may give rise to conditions which are essentially the same. Organisms apparently identical may in one individual produce only a localized, superficial lesion and in another give rise to an extensive disease process which may not infrequently be fatal. On the other hand, one at times finds distinct differences between strains of organisms isolated not only from the two types of cases, but from different cases of the same type.

The source of infection in blastomycosis is a matter of much interest, but usually difficult of determination. There have been occasional instances of probable subinfection from other cases, but these are not numerous. Interesting evidence has been advanced, most particularly by Stober, who studied a series of cases occurring in the Cook County Hospital, which would make it seem probable that under favorable conditions certain ordinary types of molds such as those seen living as saprophytes on decaying wood and in damp, dirty bed-clothing may become disease

producers. This was indicated by a study of the conditions under which certain of his cases had lived, particularly with reference to the hygiene, or lack of it, of their habitations. Animal experiments with moulds isolated from the woodwork, bed-clothing, etc., of these places seemed to substantiate this conclusion.

The organism of blastomycosis, in contrast to that of the coccidioidal granuloma, is one of low virulence or pathogenicity. It is, in fact, easier to cultivate it artificially on dry bread or old leather than to produce with it a lesion in the ordinary laboratory animal. For this reason it may be assumed that the conditions which determine the infection of an individual with such an organism must be quite different from those applying in a virulent infection. A virulent streptococcus will cause damage if *permitted* to do so by a simple abrasion in the skin of a healthy individual. The blastomycete, to the contrary, must be *induced* to infect one by a combination of factors such as (1) lowered resistance of the patient by poor diet, exposure or prolonged dissipation, (2) an artificial opening in the skin or mucous membranes, (3) inoculation of a considerable number of organisms and, possibly, repeated inoculations.

Whether a special sensitization might develop may be controverted on the ground that there is a comparatively light general reaction of the host to the infection, and a very slight production of the demonstrable specific protective substances of immunity. On this last point it need only be said that serum tests with the organism or extract of the organism seem to be of little practical value.

PATHOLOGY.

The present consideration of the pathology of this infection will of necessity be very brief, attempting rather to establish the general type of lesion, than to detail the appearance and the result of the infection in the various structures.

Certain features of the pathology stand out so clearly that they should be emphasized. They are (1) the frequent resemblance of the lesion to tuberculosis, (2) the great range of possible lesions in the body and the multiplicity of infection foci in individual cases, (3) the abscess formation, not infrequently with secondary infection of apparently harmless organisms, and (4) the frequency with which the bony structure is attacked. An-

other point, one which applies to the cutaneous lesion only, is the peculiar epithelioma-like reaction on the part of the epidermis. In sections of the lesion is seen a remarkable hyperplasia of the lower layer of the epithelium, which grows irregularly down into the infected subjacent connective tissue. The appearance which results is very suggestive of an epidermoid carcinoma and the delusion may be increased by the finding of mitotic figures in the epithelium. Undoubtedly many blastomycotic lesions have been excised, diagnosed as epidermoid carcinoma, and cure of the carcinoma credited to simple excision. Such lesions have led to the consideration of the yeasts as one of the causes of carcinomata.

As a whole, the lesion of blastomycosis is primarily proliferative, and is spoken of as an infectious granuloma. This groups it together with such infectious processes as tuberculosis, syphilis, leprosy and glanders.

Not only is the gross appearance of a blastomycotic organ often that of tuberculosis, but the resemblance extends to the microscopic section. One finds, particularly in the lungs, a similar proliferation of the fixed tissues in the form of epithelioid cells, often with giant cell formation. These cells when present usually contain yeast organisms. Leucocyte infiltration and necrosis occur much as in tuberculosis. A small lesion in the gross often appears caseous. Very frequently there is also an acute polymorphonuclear leucocytic infiltration which, together with tissue necrosis, leads to abscess formation. This may occur while the lesion is very small, as in the pinhead abscesses in the skin lesion, or not until the affected area is large. At times there is secondary bacterial infection while usually there is none in the deeper lesions. This secondary infection in lung lesions produces suppurating cavities in the same manner as in pulmonary tuberculosis. On the other hand, one may occasionlly find numerous organisms in a tissue as the spleen with little or no cell reaction as a result of their presence.

As to the distribution of the lesions in systemic blastomycosis, I can best quote a part of an as yet unpublished report by Dr. T. D. Hurley, of Kansas City, who studied the condition last year in our laboratories:

"In a total of 21 cases which have been autopsied, including 4 of the Charity Hospital cases, the skin or subcutaneous tissues had shown lesions in 20 cases, or 95%; the same percentage of lung

involvement was found, one case having apparently escaped. Bone lesions occurred thirteen times, spleen twelve, liver nine, brain and meninges eight, kidneys seven, lymph nodes six, prostate four, pleura or pleural fluid four, pancreas three, spinal cord, epididymis, pericardial fluid and heart twice each, and testicle, larynx, eye and appendix once each."

Totalling these figures reveals the fact that in these twenty-one cases there were on the average 5.6 different tissues showing infection-foci. This does not include the number of different foci in, for example, the skin or the bones of a single case, which at times is large. The point of entrance in the cutaneous infections is undoubtedly a local lesion of the skin, with direct inoculation. In the systemic infection, however, the organism apparently gains entrance through the respiratory tract in the majority of instances.

With this sketchy introduction to the pathology of blastomycosis, I must leave the further elucidation of the subject to the speakers who are to follow.

II.

MEDICAL ASPECTS OF SYSTEMIC BLASTOMYCOSIS.*

By GEORGE S. BEL, M. D.,

Professor of Clinical Medicine, School of Medicine, Tulane University, New Orleans.

Cutaneous blastomycosis has long been a fairly well-known condition and is not at all uncommon. Systemic blastomycosis, however, is quite infrequently observed, the total number of reported cases is still quite small, and the localities from which it has been reported are not numerous. Our experience of the past year in New Orleans makes it seem probable that more careful search would bring out a number of cases heretofore considered to be tubercular infections.

From the limited number of cases that my colleagues and myself have observed at the Charity Hospital, little can be added to the conclusions drawn by previous writers as to the essential pathology and the clinical manifestations of the disease. It is not our intention by this paper to convey the impression that any distinct physical signs or clinical symptoms have been found to differentiate this disease from other allied pathological conditions. It is not a difficult matter to diagnose systemic blasto-

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mycosis when cutaneous evidences are present with the continued absence of the tubercle bacilli in the internal lesions; it is the absence of cutaneous lesions and tubercle bacilli which makes the diagnosis difficult.

The study of pathological activities of blastomycetes dates practically from the discovery of Busse[1] in 1914 of a generalized fatal infection caused by a yeast. Since then scattered cases have been reported from this country and abroad.

The disease seems to be more frequent in early adult life and far more common in men. In our series of five cases three occurred in colored and two in white males. The occupations in all involved hard labor. There is no positive evidence concerning the direct and hereditary conveyance of this disease. All the above cases were natives of Louisiana. The same unhygienic general conditions which govern the development of tuberculosis are important factors, not only in predisposing to infection but in furnishing suitable conditions for the development of the blastomycetes.

The respiratory tract seems to be the frequent point of entrance in systemic blastomycosis. In a large percentage of cases as emphasized by Stober[2] the first symptoms were referable to the bronchi and lungs and, as he states, it is possible that the subcutaneous abscesses or cutaneous lesions marking the onset in the other patients were due to metastasis from unrecognized pulmonary lesions.

Mallory[3] and others believe that the infection begins practically always in the skin and usually remains localized there, but that the organism occasionally invades the circulation and causes lesions in distant parts of the body.

Blastomycotic lesions have been found in nearly every organ of the body, but the tissues of predilection are apparently the skin, lung and bone.

The composite clinical picture in our series of cases shows that the illness began with a cold, cough varying in intensity, fever, pain in chest especially referred to side, sweats, dyspnœa and expectoration of varying quantities of sputum, mucopurulent or purulent in character, frequently containing blood. The amount passed was at times large, at other times quite small. No large hemorrhages occurred except in case No. 2, which was complicated with pulmonary tuberculosis. As the disease ad-

vances the cough becomes more troublesome and expectoration more abundant. The temperature is that of a septic process, being distinctly intermittent or hectic in type and associated with sweats, occasionally chills, emaciation, loss of strength, rapid pulse and subsequent development of the characteristic cutaneous and subcutaneous lesions. Pain was present in abscess formation especially those involving or pressing upon bony structures.

The blood picture was one of secondary anemia. A leukocytosis was present in our cases, averaging between 10,000 and 16,000. This we concluded to be due to secondary invasion. Albumen and casts were present in the urine of all cases.

The essential fact in the diagnosis of blastomycosis is the presence of the blastomycetes in the exudate or tissues of various lesions. The organisms were found in the sputum of the two cases in which they were sought, and in the pleural fluid of one.

Stober[4] in his magnificent study on blastomycotic infection has compared the conditions with which blastomycosis may be confused and lays down important differential points as follows:

COCCIDIOIDAL GRANULOMA: That this disease from a clinical and pathological point of view closely resembles blastomycosis is generally conceded. The principal differential points advanced by the various authors are that in the former the nodular lesions resemble more closely those of tuberculosis, there is a greater tendency to involvement of the lymph nodes; the cutaneous lesions are more ulcerative; the average duration of the disease is shorter than in blastomycosis, and reproduction of the organism in the tissues occurs principally by endosporulation. Up to this date no case has been found in this locality.

EPITHELIOMA: The principal points are the slower growth of the tumor,, the greater induration extending into the tissues beyond the ulcer margin, and the absence of the bluish red halo surrounding the border which contains the characteristic miliary abscesses and in which the blastomycetes are found.

TUBERCULOSIS: As far as the symptoms of pulmonary infection are concerned, the clinical pictures of the two diseases are so similar that differential diagnosis is extremely difficult. Tuberculosis is the more destructive of the two, and cavity formation and marked hemoptysis are therefore more common. The examination of the sputum in most cases, of course, gives evidence of the condition present, and blastomycetes should be looked for

in those cases of suspected tuberculosis in which the tubercle bacilli are persistently absent.

Syphilis: The complement binding tests and blastomycetic vaccine reaction are suggested as differential. The absence of the first and positive reaction with the second would appear sufficient to rule out lues. Finding the organisms in exudates or scrapings would establish the diagnosis.

The blastomycetic vaccin filtrate, according to Stober and Hektoen, may prove to be of much diagnostic value. A distinct inflammatory reaction was observed in the local lesions after the injection of a blastomycetic vaccin filtrate. In three cases not far advanced there has been reported rise of temperature in from 6 to 24 hours after the injection. The temperature in some instances persisted for two days. Such a rise in temperature did not occur in two cases of syphilis, three cases of tuberculosis and three normal subjects who were subjected to the test.

The prognosis of systemic blastomycosis is extremely grave. In our series all died, but it must be remembered that in but two of our cases was the diagnosis made before death and that these patients were *in extremis*. It is stated the average mortality of such infections has been ninety per cent.

The treatment consists of prophylactic measures, fresh air, sunlight and other measures which prevent mold development. Increasing the patient's powers of resistance by strict atatention to hygiene, careful feeding and proper climatic conditions will be of benefit. Potassium iodide in large doses has given the best results, according to reports. The X-ray may prove of some benefit in certain cases and I would advocate its use. It is to be hoped that in the future vaccination with blastomycetes and their products will prove a valuable therapeutic agent.

A synopsis of the five cases which have occurred in the various services at the Charity Hospital is given below. A more complete pathological and clinical study of these cases is to be published later.

Case I. H. J., a colored male laborer, age 32, single, a native of Louisiana, was admitted to the Charity Hospital, Ward 34, January 22, 1914.

Complaint: Pain high in right chest, cough and fever.

Examination: Evidence of consolidation in right lung, with pleural involvement. Less extensive on left.

Course: Septic, with subcutaneous abscesses, usually healing

quickly after opening. Pulmonary condition progressed. Died May 19, 1914.

Clinical Diagnosis: Pulmonary tuberculosis, (probable). (Failure to find tubercle bacilli in sputum, etc., made this doubtful).

Anatomical Diagnosis, Corrected, (A-14-175, by Dr. H. W. Wade), Blastomycosis of lungs, spleen, liver and pancreas. Blastomycotic abscesses, cervical, pulmonary and pancreatic, with secondary diphtheroid invasion. Fatty myocarditis. Acute parenchymatous nephritis (marked). Congestion and edema of lungs.

Case II. M. K., a colored male laborer, age 18, single, native of Louisiana, was admitted to the Charity Hospital, Ward 34, July 4, 1914.

Complaint: Cough, weakness, diarrhea, skin lesions.

Examination: Signs of pulmonary tuberculosis. Skin lesions of wrists, ankles and mouth suggest pellagra. Ulcers, inguinal and sacral.

Course: Typical of pulmonary tuberculosis. One hemorrhage. Acid-fast bacilli found in sputum on two examinations. Died July 28, 1914.

Clinical Diagnosis: Pulmonary tuberculosis and pellagra.

Anatomical Diagnosis, Corrected, (A-14-274, by Dr. T. D. Hurley), Blastomycotic dermatitis, pulmonary tuberculosis and blastomycosis. Hypertrophy of heart. Chronic passive congestion of liver. Acute and chronic nephritis. Pellagra (?).

Case III. J. P., a colored male laborer, age 36, native of Louisiana, was admitted to the Charity Hospital July 31, 1914.

Complaint: Abscesses of chest wall and ankle, cough and fever.

Examination: Five abscesses of chest. Lungs—slight dullness and rales.

Course: Progressively worse, abscesses at various points on body and increasing pulmonary disturbance.

Clinical Diagnosis: Chronic Pulmonary Tuberculosis; Multiple Chronic Tuberculous Adenitis; Tuberculosis of the skin.

Anatomical Diagnosis, Corrected: (A-14-352, by Dr. T. D. Hurley), Systemic blastomycosis, involving lungs, liver, kidneys, lymph nodes, skin and subcutaneous tissues; Acute fibrinous and chronic fibrous pleuritis, with effusion. Acute and chronic splenitis. Dilatation of the heart. Passive congestion of the liver.

Case IV. R. B., white male laborer, age 30, a native of Louisiana, was admitted to the Charity Hospital, Ward 68, August, 1912.

Complaint: Abscess (tuberculosis ?) of back, cauliflower skin lesions of hand and foot.

Course: Marked improvement of abscess.

Discharged: October 8, 1912, with diagnosis of papilloma of hand and foot. (After this patient spent nearly three months in a tuberculosis camp, then worked for ten months).

Readmitted: October 17, 1913, ward 68, for abscess of back and necrosis of ribs, probably tuberculous.

Course: Condition progressed. Curetted several times, and rib resections performed. Tissue was sent to laboratory September 29, 1914, and diagnosis of blastomycosis then made. Lungs and other structures became involved. Died February 3, 1915.

Clinical Diagnosis, Corrected: Systemic blastomycosis, involving lungs, cord, back, ribs, vertebrae, face, thigh and knee. Secondary streptococcic invasion of certain lesions. (Autopsy was not permitted).

Case V. White male laborer, age 61 years, a native of Louisiana, was admitted to the Charity Hospital, Ward 12, (Tuberculosis Division) May 14, 1914.

Complaint: Pain in chest, cough and shortness of breath.

Examination: Dullness over both upper lobes, and rales everywhere. Sputum negative.

Transfers: May 25, 1914, to Ward 16, with diagnosis of bronchial asthma and valvular cardiac disease. July 6, 1914, transferred to Ward 66, on account of lesions thought to be epithelioma of cheek and sebaceous cyst or abscess of scalp.

Course: Abscess drained, tissue removed from face July 13, 1914, diagnosed histologically as blastomycosis. Abscess of right elbow developed. Deserted August 13, 1914.

Readmitted: November 11, to Ward 71. Previous conditions, cardiac, pulmonary and superficial, much aggravated. Died January 18, 1915.

Anatomical Diagnosis Corrected: (A-14-25, by Dr. T. D. Hurley). Blastomycosis of face, scalp, chest and arm. Blastomycosis of ribs and of bones of skull, right arm and right forearm. Blastomycosis of heart and pericardium, lungs, spleen and brain, and meninges.

CONCLUSIONS.

The report of these cases shows the presence of systemic blastomycotic infection in our vicinity and emphasizes the frequent confusion of such cases with tuberculosis and other infections.

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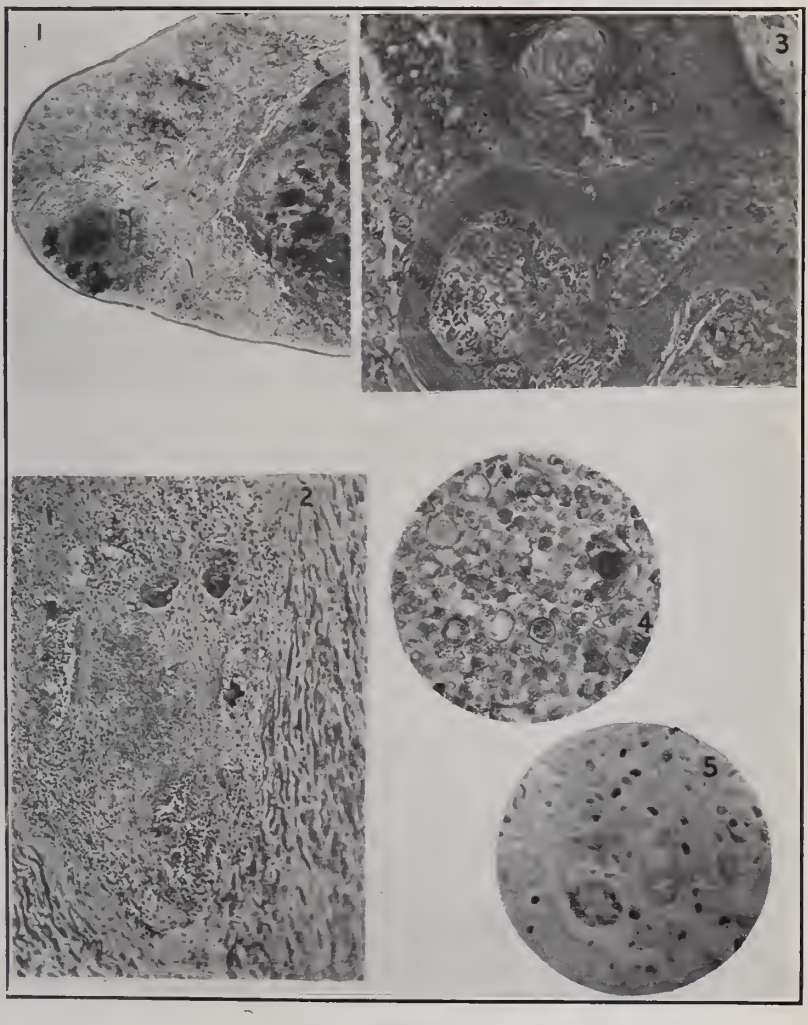
2. Stober: **Arch. of Int. Med.,** 1914, 13, p. 534-535.
3. Mallory: Principles of Pathologic Histology, p. 231.
4. Stober: Ibid, p. 549-550.



ILLUSTRATING DR. WADE'S ARTICLE.

(Symposium on Blastomycosis)

1—Taken April 15, 1915. 2—3 months later. 3—Taken April 15, 1915.

ILLUSTRATING DR. MENAGE'S ARTICLE.
(Symposium on Blastomycosis)

III.

CUTANEOUS BLASTOMYCOSIS.*

By H. E. MENAGE, M. D.,

Professor of Diseases of the Skin, Graduate School of Medicine, Tulane University, New Orleans.

This brief paper will deal only with the cutaneous appearance of blastomycosis. A fully developed case of blastomycosis, with all its characteristics present and undisturbed, is usually easy of diagnosis, even without the microscope.

Although Gilchrist, of Baltimore, deserves the credit as the earliest observer, American, at any rate, of blastomycosis, I believe the best description of the disease can be found in articles by Hyde, Montgomery and Ormsby, of Chicago, who recognized and described the first cases in the Middle West, where the disease seems to be very common. The disease, according to them, begins as a small purplish-red papule or papulo-pustule the size of a pea, which soon covers over with a crust. At this stage it would be almost impossible to name the disease, except after the microscopic examination; but as time goes on its characteristics become manifest. The small lesion grows into an elevated patch, 1/8 to 3/8 of an inch above the surrounding skin, with a marked papillomatous tendency, so often compared in appearance to a cauliflower; the papillæ bleed easily and from the mass can be squeezed out a sero-purulent secretion. The small crusts of coagulated blood cap the papillæ, so that the whole surface of the lesion seems to have been sprinkled with black pepper; a picture fairly characteristic. The border of the diseased area is one of its most characteristic features. It slopes more or less abruptly from the elevated roughened surface to the normal skin, from which it is sharply defined. It is smooth, of a dark-red or purplish-red color and is from 1/8 to 3/8 of an inch wide. On close inspection, even with the unaided eye, may be seen numerous miliary abscesses containing a thick glairy secretion, which becomes pustular as the lesion grows older.

It is in these small abscesses that almost pure cultures of the blastomyces are to be found. Barring the microscope, the purple-red color, the crust-capped papillæ, the elevated sloping border,

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with miliary abscesses, are, I believe, the most diagnostic clinical features of the skin lesions of blastomycosis.

Recently, Cuban observers have described some different clinical types of the disease on the skin, but they are comparatively rare and only the microscope will reveal their true nature, and, therefore, these will not be considered at this time.

Whenever confronted by a skin disease answering the above description, one should not overlook other possibilities, among them chiefly syphilis of the hypertrophic tract, sporotrichosis, epithelioma and especially tuberculosis of the varicose type, which last disease closely resembles blastomycosis, the microscope being necessary, in most instances, to solve the problem.

The selected location of blastomycosis is principally on the hands and face, probably because those regions are most exposed to infection; but the disease may be found anywhere over the body, including the mucous membranes. When on the face and along the lower eyelids, ectropion follows healing of the disease, giving the patient the appearance of an old lupoid case. Such a case I have had in my service recently.

Seventy-five per cent of the cases occur in men and for the most part in those over forty years of age.

History of the Case and Presentation of Patient: William S., negro, aged 55, born in Louisiana and farmer by occupation, was admitted to my service at the Charity Hospital, New Orleans, on or about April 15, 1915. He is a tall, comparatively well-fed negro, with a negative family history for cancer and tuberculosis, with the usual childhood diseases and gonorrhea five years ago. Von Pirquet tuberculin test negative, Wassermann and Tschernogubow reactions negative; no albumin, no sugar, hyalin and granular casts present. Present illness dates back four years, when he noticed "a small sore on hip, calf of leg and on the face."

Upon admission, as photographs and lantern-slides will show, he presented numerous large papillomatous lesions, involving the whole right half of his face and extending to the neck almost to the median line posteriorly. The whole surface was covered by a thick, offensive crust, which necessitated the persistent use of poultices to remove. I am pleased to be able to show you the patient to-night, almost completely recovered.

As far as memory serves me, this is the only case of proven blastomycosis of the skin in a full-blooded negro that I have seen in my service.

IV.

REMARKS ON THE SURGICAL ASPECTS OF SYSTEMIC BLASTOMYCOSIS.*

By RUDOLPH MATAS, M. D., LL. D.,

Professor of General and Clinical Surgery, School of Medicine, Tulane University, New Orleans.

The question that I have been invited to discuss may be squarely put by stating: What can surgery do for patients suffering with the systemic lesion of blastomycosis? By the intervention of surgery in this disease as in all other grave constitutional infections, we must circumscribe our definition of surgery to those procedures by which the disseminated lessons of blastomycosis may be eradicated or palliated by direct operative methods of treatment. In dealing with the purely localized primary lesions, especially the more frequent cutaneous lesions, surgery has everything to do with the cure of the patient. Because, as in all other localized infections, the complete surgical removal of the primary focus or foci is tantamount to the suppression or radical cure of the disease. But when the disease has spread from its original atrium of infection, by metastases through the blood or the lymphatics, and has, in this way, attacked distant tissues and organs simultaneously or consecutively, it is quite evident that the power of surgery is immediately dislocated from the highest curative plane to the very humblest secondary role, as a mere adjuvant to the constitutional measures that have been described under the internal or medical treatment.

You might as well ask what can surgery do for systemic, disseminated tuberculosis, syphilis, leprosy or cancer, as to ask, with even greater insistence, what can surgery do for blastomycosis when this has been generalized by metastatic dissemination? It is quite plain that surgery can only deal with lesions that are accessible to the surgeon, but, when these are widely distributed over the organism, the removal of isolated lesions, can only palliate certain symptoms or conditions; the cure of the disease being made possible only through such general and constitutional agencies as will strengthen the natural defenses of the organism until spontaneous immunization has been obtained, or, when specific agents, when these exist, bring about such immunization by artificial means.

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If we now supplement these a priori considerations of what we know of the clinical facts and history of this disease,—since we first learned to recognize its systemic manifestations,—then the answer to the question, What can surgery do for the cure of systemic blastomycosis? may be boiled down practically to a small residue which is summed up in one word—Nothing!

What is worse, if I may judge by my personal observation of the comparatively few, but typical, cases of systemic blastomycosis that have come under my observation at the Charity Hospital and elsewhere, it does not appear that the addition of the constitutional measures of treatment now known to us, and which are calculated to reinforce the local treatment, exercise any decisive influence upon the final course of the disease, which is admitted to be fatal by the most experienced authorities in not less than 90% of the cases.

The gist of the whole matter was summed up in the closing remarks of Dr. Charles A. Powers, of Denver, who discussed the outlook of blastomycosis from the surgeon's point of view at the meeting of the American Surgical Association held in New York, in 1914. He says:

"The central thought in my mind is that the systemic form of blastomycosis is almost invariably fatal. This grave condition generally begins in a small local focus. I believe that such local focus or foci, when accessible, should be widely excised as early as possible in order to attempt to forestall dissemination."

In other words, the only opportunity to cure blastomycosis by surgery is when the disease is still local. When it is systemic, generalized, and widely distributed, it is helpless, except as a mere palliative.

Blastomycosis and Coccidioidal Granuloma: Considerable confusion has been caused in the bacteriologic and clincal study of blastomycosis by the effort to differentiate the infections caused by the budding fungi (blastomycetes) and those which multiply by sporulation or endogenous proliferation (oidiomycosis or the so-called coccidioidal granuloma). Some of the facts pertaining to this discussion are not without relevancy in a symposium such as this, which is intended to be educational rather than critical or controversial. The essential features of this question are that, according to a considerable number of competent observers, there is a specific form of infection which causes

characteristic granulomatous lesions in which the causative organism is a sporulating fungus, quite distinct in its morphological, cultural, and clinical characteristics from the true blastomycetes or budding fungi which we have been considering. It is claimed furthermore that this type of fungus is quite limited in its geographical distribution. Up to the present time about 24 cases of this type of mycotic infection (Coccidioidal granuloma) have been reported, and nearly all have occurred in the San Joaquin valley of California, with the exception of an isolated case reported by Wernicke and Posadas in Montevideo, Uruguay, in 1892, and the case reported from Denver, Colorado, by Dr. Powers, in 1914. The first two cases discovered in California were identified, and reported by Dr. Emmett Rixford, of San Francisco, in the *Occidental Medical Times,* in 1894, under the title of "Protozoic Dermatitis." Dr. Rixford, at that time, believed that the spherical and sporulating organisms that he saw were protozoa, allied to the coccidia. He sent his material to Dr. Welch, of the Johns Hopkins Hospital, who gave it to Dr. Gilchrist for study. A joint report was published in 1896 in the Johns Hopkins Hospital Reports under the title, "Two Cases of Protozoan Infection of the Skin and Other Organs." Dr. Stiles, of Washington, a well-known authority on protozoa, suggested the name *"Coccidioides immitis"* for this organism, and most of the cases subsequently reported have been styled "coccidioidal granuloma." Other cases began to appear. Dr. D. W. Montgomery, of San Francisco, came very near identifying the true fungus nature of this parasite. He made cultures, but found mycelia present in all his tubes. These he threw away, believing them contaminated. It remained for Dr. W. Ophuls to observe the mycelia growing out of the spherical organisms in the hanging drop, which observation put an end to the notion that these organisms were protozoa. Ophuls suggested the name *"Oidiomycosis coccidioides,"* but "coccidioidal granuloma," which suggests a protozoan resemblance, has clung to the nosology.

Rr. Rixford, from whom I have quoted this bit of history, also states in his discussion of Dr. Powers' paper at the meeting of the American Surgical Association, 1914, previously referred to, that

"all cases of this particular type of mycotic infection have been fatal, with one exception, which was cured by an early amputation. In his

first case, in which the disease lasted seven years before the patient died, it invaded both orbits, destroyed both eyes, both ears and lips. It invaded the bones and internal organs, particularly the lungs and testes, and the adrenals were as large as duck's eggs. A second case differed from the first in that the disease was much more virulent, the patient dying in two months."

Drs. P. K. Brown and W. Taylor Cummins, of San Francisco, have recently reviewed, with great thoroughness, the differences existing between the so-called "coccidioidal granuloma" and blastomycosis. In the *Archives of Internal Medicine* for April, 1915, after an exhaustive study, they conclude that there are well defined differences in the pathogenicity of the two diseases, coccidioidal granuloma being always fatal and often rapidly fatal in man, while blastomycosis is commonly not so, except for the systemic cases, in which the organisms have been found associated with bacteria of known and unknown pathogenicity (Zinssen, Hektoen, Gilchrist and Stokes). The clinical and pathologic aspects of coccidioidal disease are those more clearly resembling tuberculosis, as there is a greater predilection for the lymphatic system than there is in blastomycosis, and cutaneous lesions are likely to be more ulcerative. There appears to be but one reported case of coccidioidal disease in the female sex, whereas there have been many of blastomycosis. Iodids have markedly benefited many, and apparently cured a few blastomycosis patients, whereas they have had no effect on the rapidly progressive lesions and toxemia of coccidioidal granuloma.

The two organisms, however, appear to be closely related, having much in common, but with such differences as to justify the conclusion that they are distinct entities. Morphologically, in pus and solid tissues they are differentiable by endosporulation in the one and budding in the other. Cultural differences are not so pronounced, although Brown and Cummins have found that growth is initially more rapid with coccidioides. Blastomycetes appear to grow best at room temperature 20° C; coccidioides, at 37° C. Various dyes show some differences in the inhibition of growth. Rabbits and guinea pigs are more resistent to blastomycetic than to coccididioidal infection.

Diagnosis.—The essential factor in the diagnosis of this disease is the demonstration of the blastomycetes in the sputum or in the pus of various lesions. This can usually be done so easily

that there would seem to be no excuse for not recognizing the disease when it exists.

Stober cautions, however, that the organisms are easily overlooked in stained preparations, and examinations of fresh material are not a common routine practice. The mere histological picture of the tissue is not sufficient; it *is suggestive,* when the pathologist is thoroughly roused to its possible presence, but the giant cell grouping in the granulomatous tissue might easily pass for tuberculosis and, in this way, the real causative factor is overlooked. It happens, therefore, that the organisms in most cases have been found only when sought for and when the nature of the disease has been suggested by its clinical or pathological features.

Blastomycosis should be ruled out in all cases of chronic pustular or ulcerative lesions of the skin, wasting pulmonary diseases in which there is a persistent absence of the tubercle bacillus in the sputum, in all superficial or deep abscesses especially when connected with bones, suppurative arthritis and suspected Pott's disease. In the clinical study of blastomycosis it should be remembered that systemic infection usually takes place through the respiratory tract, and that the cutaneous manifestations are followed by systemic invasion with comparative rarity. It should also be remembered that the blastomycetic infections are essentially of a pyogenic character and that the pus wherever found is likely to contain the characteristic organism. In the skin, the encircling wreath of minute miliary abscesses or pustules on the periphery of the ulcers and granulomatous, fungoid, or papillomatous, areas is most characteristic. Abscesses in the subcutaneous tissues, lymphnodes, muscles, bones, nervous tisssues and viscera are characteristic of this pyogenic tendency.

"The size of these abscesses is most variable, ranging from very minute areas to enormous cavities containing a quart or more of pus. Some are painful, others painless. The pus is usually thick and tenacious, making aspiration difficult, and varies in color from a light yellow to a dark red or brown according to the amount of blood present (Stober).

The affections of bone are: Osteomyelitis, periostitis and arthritis. The osteomyelitis which is suppurative in its nature may be diffuse or localized. In either case the fungi are very numerous, involving the marrow compartments and causing necrosis of the marrow, with the formation of purulent exudate.

In the long bones, the infection has a tendency to lodge in the epiphyses, suggesting the appearance of infarcts. Extension from the epiphyses is usually responsible for the joint lesions. The long bones of the extremities, the vertebral column (simulating Pott's disease) and the pelvic girdle, more rarely the cranial and facial bones, and the smaller bones and joints of the extremities, are the seat of the systemic lesions. The X-ray appearances have been especially well studied by Dr. H. E. Potter (Radiologist of the Cook County Hospital, Chicago) and his findings are ably detailed in Stober's report.

This observer believes that the most characteristic features of the X-ray picture in the bone lesions of blastomycosis are: The intense localized nature of the destructive process. The lesions are most numerous and distinct in the long bones. The bone surrounding the ordinary blastomycotic focus presents a normal structure with little tendency to change in density. There is a sharp line of demarcation between bone apparently intact and regions of total necrosis.

"Such a marked localizing destruction occurring within the spongy bone of a diaphysis, together with a mature and homogeneous periosteal proliferation, with or without a cloaca, is so constantly present in the ordinary lesions of blastomycocis, that when seen in further skiographs, where the etiology has not been determined, a careful search for blastomyces should be made." (Potter).

TREATMENT OF BLASTOMYCOSIS.

Prophylaxis—Pulmonary infection through the upper respiratory tract is according to Stober and his associates most often caused by inhalation of mold spores. This can be prevented by proper ventilation, sunlight and drainage of residences and shops, thus preventing the dampness and moisture which favor mold and mildew growth. Cutaneous infections can be avoided by careful cleansing of wounds contaminated with decaying or moldy wood or other vegetable material. Auto inoculation can be avoided by not scratching or by keeping the nails and hands scrupulously clean.

Medical—Spontaneous recovery is possible in less than ten per cent of the systemic cases. The influence of food, climate and hygienic measures is undoubtedly as beneficial in this as in other chronic infection.

Drugs—Potassium iodid exercises a decided beneficial influ-

ence, though it does not cure systemic infections. It is a total failure in the coccidioidal type. Copper sulphate, of which much had been expected at one time, is of no value whatever in the systemic disease. Rœntgen rays are very beneficial and in many instances curative, for the local or superficial lesions, especially the skin infections, as so well shown in the case exhibited here to-night by Dr. Menage. Symptoms of conditions must be met very much as they are dealt with in tuberculosis.

Vaccins with blastomycetes and their products have been prepared by Hektoen and appeared to be curative in one case treated by Stober, but no cures are reported in the other two cases in which it was tried. Vaccins have never been tried in the treatment of our cases in New Orleans. The vaccin treatment is worthy of further trial until a greater experience shall decide its merits.

The *surgical* lesions, especially the more accessible of the skin, should be treated promptly and radically by excision, iodids and X-rays. Abscesses in pus collections, wherever accessible, should be drained and an effort made to disinfect the cavity by filling them up with tincture of iodin. Glands that are breaking down or that are accessible should be extirpated with the primary focus. Nothing can be done with a generalized adenopathy of the systemic disease. Diseased bones and joints should be treated by arthrectomy excision or by amputation.

Dr. Bevan, who has had a large experience in the surgical treatment of blastomycosis, states:

"I have been personally interested in the treatment of this disease and want to emphasize that it rests upon the use of potassium iodide, plus the use of X-rays. In the local cases nearly all are cured with KI and X-rays. None of the systemic cases that have come under my observation have ever been cured by any method of treatment."

In conclusion, the chief value of a symposium on blastomycosis, apart from its educational benefits, is that it rouses the attention of the local clinician and especially the general practitioner, who is most likely to come across these cases, to an important factor in diagnosis which is likely to be overlooked in obscure cases of cutaneous, pulmonary, osseous and visceral diseases. There can be no question that many cases of systemic and cutaneous blastomycosis have been passed by in our midst and have been treated as a typical tuberculosis, syphilis or malig-

nant disease. Thanks chiefly to the alertness of our dermatologists we have recently come to realize that a disease which was practically unknown in our practice is not such a rarity after all. In the course of last winter's session, I had the opportunity, through the courtesy of Drs. Ménage, Parham and Perkins, of presenting a group of four cases, three of which were systemic, at one clinic; an extraordinary occurrence in our local experience. In Chicago, I saw several years ago fully 16 or 20 cases fully illustrating all phases of the disease, in a joint clinic held at Rush, by Drs. Billings, Bevan, Ormsby and others. Dr. Stober, of Chicago, deserves great credit for the thoroughness with which he has investigated the prevalence of this disease in Chicago. His work, in collaboration with a large group of associates, is a model of painstaking research, and, taken collectively, with the contributions of his colleagues, as they appear in the *Archives of Internal Medicine* for 1914 (Vol. 13), is a perfect encyclopedia of information or permanent reference to all those who may seek light upon this new and important subject. In his paper on Systemic Blastomycosis, Stober states that, in 1907, Hektoen reported the first 13 cases; in 1908, Montgomery and Ormsby increased the list to 22; in 1914, Stober himself still further enlarged it to 36, showing an increase of over 200% in the last two years. If we add the five systemic cases observed at the Charity Hospital last winer, which were referred to by Drs. Wade, Ménage and Bel, the list of well authenticated cases of the systemic type is increased to 41. The instructive papers which have been presented to-night by Drs. Wade, Ménage and Bel will not complete the value of the symposium until a full report of the well-authenticated cases observed in New Orleans up to the present time has been presented in the near future to this Society for publication, as a contribution to the regional distribution of this infection in the United States. We have made wonderful strides in our knowledge of this disease, in ferreting out its causes, its pathology, its clinical characteristics and its diagnostic earmarks, but we are far more helpless in dealing with its systemic manifestations than we are with tuberculosis or syphilis and equally as helpless as in cancer or leprosy. From this therapeutic point of view, blastomycosis offers a splendid opportunity for research which will be made greater by the larger

facilities for its local recognition that will follow after such discussions as we have had to-night.

SYMPOSIUM ON BLASTOMYCOSIS. DISCUSSION.

Dr. W. H. Harris: The salient features bearing upon the evening's subject have certainly been clearly and concisely emphasized by the various speakers.

A sputum of a child eight years of age was recently sent to me for examination for **B. Tuberculosis**, with the statement that I should find that organism, as clinically the case was quite typically pulmonary tuberculosis. I made repeated smear examinations and also resorted to the antiformin method, but failed to find any acid fast organisms. I decided it might be well to attempt to find some other etiological factor and upon search for same found bodies in accord with blastomycetes. These were prettily demonstrated upon the staining by Wright's method. I turned over another specimen from this case to Dr. Wade, because of his interest in the subject and I understand he has the culture of it in his stocks. The physician in charge of the case, Dr. Holderith, informs me that the mother has a similar clinical picture to the child. I tried to procure a specimen from this source, but have not succeeded.

I think it is definitely indicated in instances where pulmonary tuberculosis seems evident by clinical examination and where the reports from the laboratory are persistently negative for T. B., that certainly some other pathogenic agent should be looked for. Of course, other conditions besides blastomycosis can occasion a pathological picture capable of producing physical signs and clinical symptoms resembling tuberculosis, such as gangrene of the lung, syphilis, actinomycosis and the like, as well as certain tumor formations. Hence, it is well to look for not only the blastomycetes, but, when possible, also the other causal agents that may give rise to lesions simulating tuberculosis.

The great value of this symposium is quite evident and all will go forth filled with enthusiasm and a desire to ferret out cases of blastomycosis. This is, of course, a great gain, as it is plainly shown, from the papers presented to-night, that much more blastomycosis, at least systemic blastomycosis, is prevalent in our community than has as a general rule been considered by the profession. I feel, nevertheless, that it is timely to sound a note of conservatism as regards the promiscuous application of this diagnosis. There are many yeast bodies and spores of molds that are not unlikely to be confounded with the organism of blastomycosis. Those who are not familiar with its diagnostic features under the microscope, should be careful to avoid being misled by any of these confusing types. This point is especially applicable to sputum examinations, wherein saccharomyctes and various molds may and, in old specimens, are frequently, present.

Dr. Wade (in closing): I am glad that Dr. Harris has brought up the question of contaminating yeasts in sputum and other exudates. To discuss it I must touch on the botany of the organisms in question. The group of pathogenic fungi which cause the disease known as blastomycosis are, it would seem, primarily to be molds and are not true yeasts. They are subdivided according to the manner of growth on artificial culture as (1) hyphomycetoid, (2) oidioid and (3) blastomycetoid, the latter group alone multiplying by the formation of yeast cells.

The differentiating point which serves to identify the pathogenic organism in exudates is the fact that they have the peculiar, firm, doubly refractile cell-wall which has been deposited upon them within the tissuees. This cell is correctly a sclerotic conidium, and to avoid confusion with true yeasts should not be spoken of as a yeast-cell. The yeasts, which are saccharomycetes, seem never to acquire this cell-membrane or shell, whether they develop in the exudate before or after expulsion from the animal lesion. So, if one requires to find true sclerotic conidia before diagnosing blastomycosis, contaminating saprophytic yeasts, present accidentally in the sputum, etc., will not lead one astray. On the other hand it seems possible that disease may be produced by true saccharomycetes, organisms which do not grow as molds in culture nor appear with hyaline capsules in the exudates. I would suggest the possibility that the cases of Dr. Harris and Dr. Lanford belong to this group.

I wish to thank Dr. Harris for his remarks, and for emphasizing the need for caution in ruling out saprophytic yeasts in the diagnosis of blastomycocis.

Dr. Menage (in closing): I have little to add to what has already been said. Pathologists also sometimes make mistakes and contradict the clinician's diagnosis of blastomycosis. I remember a case a few years ago of blastomycosis of the forearm which the pathologists reported as an epithelioma. The lesion was classical of blastomycosis, clinically, and involved the left forearm from the knuckles to the elbow on the extensor surface. The case was cured with large doses of iodid and X-rays.

I made a diagnosis of blastomycosis eight years ago in the case Dr. Bel reports as coming from Dr. Maes' service at the Charity Hospital. The treatment consisted in the administration of the iodids in enormous quantities. The case presented to-night took 180 grains three times a day. Another case I have in mind was given even larger doses, without bad results.

Dr. Matas (in closing). I have nothing more to add to the discussion except to emphasize the importance of continuing the work so well begun to-night, by renewing my suggestion that a permanent committee be appointed by the chair to report at some stated time, on the incidence of blastomycosis in our midst. The majority of

these cases will probably come under observation at the Charity Hospital, where Drs. Wade, Bel, Menage and others, who have enjoyed special opportunities for the study of the disease, will be able to continue their observations. Dr. Patton, the registrar at the Charity Hospital, I am sure, will be willing to help such a committee by compiling the statistics from his well organized records and in this way facilitate the preparation of a report to this Society which will prove valuable as a contribution to the local topographical study of blastomycosis.

MALARIA AND CARRIERS OF MALARIAL INFECTION.*

By JAMES CLIFTON COLE, M. D.,

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Any paper in which malaria is discussed frequently attracts little more than passing interest before the average medical society. The principal explanation, I believe, is to be found in that we are dealing with one of the few subjects in medicine in which the laity is more or less familiar. Medical men feel that such a simple thing as malaria demands little consideration. Second only to "nervousness," malaria is credited with more symptoms than any other two common infections. Oftentimes the doctor or the layman is correct; more often, in all probability, he is incorrect in his diagnosis.

The diagnosis of malaria can be made positively in practically every case. It is true, in malarial hemoglobinuria it is difficult and often impossible to demonstrate the plasmodia; but with a limited skill—and every general practitioner can readily acquire it—malarial plasmodia can be demonstrated in every case in which there is sufficient infection to give rise to symptoms.

From an economic viewpoint, too, we are considering a subject of vital interest. Merely to state the fact that much time and money is lost as the result of malarial infection on plantations and in rural communities would not impress you; but to say that on one plantation in Arkansas there were twelve cases of malaria, each patient losing an average of five and one-half days, with an average loss of three days of time in nursing, making an average of eight and one-half days' loss for every case of malaria, giving a total loss of one hundred and two days during the crop

*Read before the Attakapas Medical Society, June 23, 1915, New Iberia, La.

season on the plantation,—this will serve to convince you of the economic importance of eliminating malaria. These figures are taken from recent observations made by Mr. J. K. Thibault, Jr., of the Bureau of Entomology of the United States Department of Agriculture.

Some Southern States are already making war upon malaria and mosquitos. Mississippi has incorporated, in the textbooks as studied by the children in the early grades, chapters on malaria. It should be taught in the public schools, preached from the pulpits, and heralded by the press. Perhaps in no other section in the South is the eradication of mosquitos and the elimination of malaria such a vital issue as in South Louisiana. Had you thought of the advisability, or even the possibility, of special legislation to govern the system of irrigation and drainage as employed in the rice fields and cane growing section of this and other States?

I appreciate the fact that I am addressing professional men who are familiar with conditions in the rice growing sections of South Louisiana, and would implore you, as the sanitary guardians of the public health, to become even more enthusiastic in the study and treatment of this old but important infection, malaria.

If you have been diagnosing your cases purely upon clinical signs and symptoms, a percentage has escaped; if you have been treating all suspicious cases with quinin, on general principles—those in which the clinical symptoms were not quite satisfactory for a diagnosis of malaria—you have mistreated a larger percentage.

The argument is often advanced that malaria, being such a simple condition, readily recognized and specifically treated, does not demand any great expenditure of time, skill or money. These things are partly true. The mortality is low; but the loss of time, the reduction in labor efficiency, and the curtailment of shop returns, are of far more serious moment than the low death rate.

Before considering the matter of carriers, let us remember that there are three important factors concerned, and necessary to the propagation and dissemination of the infection is a union of these factors. We will remember them as the triangle of M's—Malaria, Mosquito (anopheles) and Man (non-immune)—any one of which, alone, is inert and harmless; together they form a

triangle which will always prove a serious menace to public health and material prosperity.

The matter, then, of eliminating malaria, theoretically, is a simple one—dispense with any of the three angles. Destroy the mosquito or isolate the infection and allow man to return to his normal state and station. Rural and plantation life in once-infected areas will return to the "land of all the world supremely blest."

Carriers of malaria are infected man and mosquitos. Human carriers are active and potential; active applying to those with symptoms and in whose circulation the parasites are easily demonstrated; potential is applied to that class of cases which has been treated for malaria and is apparently cured, yet harboring the gametocyte or sexual form, in his deeper circulation. It is accepted that quinin does not destroy the gametocytes. The active carrier is easily reckoned with; isolation, by means of screening, renders him a source of danger no longer. The potential carrier, then, is the principal source whence the mosquito replenishes her stock and propagates her nefarious business. Since this latter carrier responds with difficulty, if at all, to specific treatment, some other and more successful method will have to be devised.

Very readily someone suggests the eradication of the carrying mosquito. This is the logical thing to do, but is it at all practicable? The anopheles is a very modest little animal, preferring the quiet of the country to the din and roar of cities. She lays her eggs in very secluded spots, and in every way instintively tries to preserve her species. About one month from the time the eggs are laid, they are hatched into mosquitos. Each female mosquito may lay eggs many times in a season and many hundred of eggs each time. These young mosquitos, after ten days, are capable of laying many hundred of eggs. So it can be appreciated that one pair of anopheles mosquitos, in the course of one season, can give rise to many millions of their kind.

It seems, then, a natural conclusion that until rural districts become suburbs of cities, until drainage canals become paved streets, marshes and swamps are converted into beautiful parks, and until all slow-moving streams and impounded waters are no longer ideal places for mosquito breeding, we are going to be

annoyed by mosquitos and constantly visited by the menace that follows in their wake.

Although we have already admitted the difficulty experienced in disinfecting the blood of potential carriers, I do think it is a less difficult task to disinfect such a blood than to eradicate mosquitos. If quinin is really a specific in the treatment of malaria —and this fact is generally accepted—there remains to be found some method or one proper method of administering it. No less an authority than Dr. C. C. Bass holds that during the winter months, when mosquitos are hibernating and are not sources of infection, if human carriers are properly and chronically treated before the spring season opens the majority will either have cured themselves or been cured. He recommends the use of quinin, not only in known carriers, but in all the members of an infected household, whom he considers carriers.

The salvation of malarial infected sections, the reclamation and cultivation of erstwhile marshes and swamps, the return to normal of labor efficiency, depend not upon the expenditure of large sums of money in drainage canals, etc. Scientific sanitation has done much and is destined to do much more, but mosquitos are here for many years to come, and man for always.

I believe we should direct our energies and attention toward man, particularly the so-called chronically infected fellow, or potential carrier.

If quinin is specific, there should be some method of administering it to get the maximum result in the minimum of time, and not have to treat a patient throughout the winter season, and still have him prove a carrier.

Malaria can be positively diagnosed.

Quinin is one of the few specifics we have in medicine; quinin cures malaria. There will perhaps some day be a better method, with reference both to quantity and mode of administration.

I do not advocate the discontinuance of war upon the anopheles; they are pests, aside from being carriers of disease. But it means the outlay of enormous sums of money and expenditure of time, all I believe to little avail.

Diagnose your cases of malaria. Disinfect the blood of every patient who might be a probable carrier. Isolate and treat known cases, and in a few more years malaria will be a rare infection, even in the presence of anopheles mosquitos.

A CONTRIBUTION TO THE STUDY OF HERNIAS OF THE OVARY, OF THE FALLOPIAN TUBE, AND OF THE OVARY AND FALLOPIAN TUBE.

By AIME PAUL HEINECK, M. D., Chicago, Ill.

Surgeon to the Jefferson Park Hospital, Rhodes Avenue Hospital, Etc.

Hernia is a widespread disease. In the female, the frequency of external hernias has been and is still underestimated. All the hernias herein considered were external hernias, that is, their outermost overlying saccular covering was skin and each, after reaching a certain stage of development, gave rise to a more or less visible, and palpable, external swelling in the ischiatic, obturator, ventral, femoral, inguinal or other region, depending upon the anatomical location of the hernia.

I wish to formulate some conclusions based upon quite an extensive study of the literature, and also upon my clinical experience, concerning that type of external hernias in which the hernial sac content is either the Fallopian tube, the ovary or the Fallopian tube and ovary, alone or in association with some other abdominal viscus or viscera.

In investigating the subject, I soon became convinced that deductions and conclusions, to be valuable, should be based solely upon the study of cases in which the hernial contents had been demonstrated at the operating, dissecting or post mortem table.

The escape of the uterine appendages from their normal situation may take place through any of the weak spots or openings of the lower abdominal or abdomino-pelvic cavities. A hernia originating either in the internal, or in the external inguinal fossa and escaping above Poupart's ligament, is an inguinal hernia; if it escapes beneath the same ligament, and emerges through the crural canal and the saphenous opening, it is a femoral hernia; if through the obturator canal, an obturator hernia; if along the course of the gluteal or sciatic nerves and vessels, emerging almost always above, very infrequently below the pyriformis muscle, very rarely through the lesser sacro-sciatic foramen, a gluteal hernia; if through an operative scar in the abdominal wall, a post-operative hernia.

Though sanctioned by long usage, the classifying of hernias into congenital and acquired is, at times, misleading.

Some hernias are congenital in the truest sense of the word; they are complete at birth, hernial contents being then present. In most of the so-called congenital hernias, the sac only is existent at birth; in an acquired hernia, the sac is always of post-natal development, and in all but hernias "par glissement" is entirely derived from the parietal peritoneum. Congenital hernial sacs result from the want of closure of peritoneal processes, such as the processus vaginalis peritonei in the male, the canal of Nuck in the female, etc., normally present in the fetus. Congenital hernias may appear at any period of life.

Orifices for the transmission of vessels and ducts are normally present in the muscular and aponeurotic layers of the abdominal walls. An acquired hernia is formed by the gradual or sudden escape through these orifices, pathologically widened, of viscera normally contained within the abdominal cavity; the viscera in their passage through and beyond the abdominal wall create paths of escape for themselves by bulging and pushing forward the parietal peritoneum.

CONCLUSIONS.

1. The Fallopian tube, the ovary, or the tube and ovary, in part or in their entirety, may be herniated. Degree may vary from a complete descent into a hernial sac, of the tube, ovary, or tube and ovary, to a condition where herniated viscus or viscera lie just without the abdominal ring.

2. The herniated tube, ovary, or tube and ovary may be the sole content of the hernial sac, or there may be present as associated hernial contents one, two or more of the following structures or organs: Meckel's diverticulum, appendix vermiformis, omentum, urinary bladder, small or large intestine, rudimentary or fully developed uterus.

3. Tubal, ovarian, and tubo-ovarian hernias are congenital or acquired, unilateral or bilateral; exist alone or in association with one or more other hernias of the same or of dissimilar anatomical types, of the same or of dissimilar clinical characteristics.

4. These hernias, in a small proportion of cases, co-exist with malformations, underdevelopment or absence of other internal or of some external genitalia.

5. In individuals having a herniated tube, a herniated ovary,

or a herniated tube and ovary, pathological states of other internal genitalia or of some external genitalia may be present: Vaginitis, ovarian cystoma, uterine fibroid, uterine prolapse and other uterine displacements, etc.

6. These hernias may coexist with pathological states of organs other than the internal or external genitalia: Chronic hydrocephalus, multiple stenosis of intestines, hydronephrosis, etc.; these coexisting pathological states not having any relation of cause or effect to the hernial infirmity.

7. Congenital or acquired hernias, of the tube, ovary, or tube and ovary, may develop at any period of life. These hernias have been observed in nulliparæ, in primiparæ, and in multiparæ. No age is exempt. No race is immune. As hernias by their complications shorten life duration, the number of hernia-bearing individuals that reach an advanced age is small as compared to that of the non-herniated.

8. According to their anatomical site, hernias of the uterine appendages are designated as post-operative, ventral, gluteal, sciatic or ischiatic, obturator, femoral and inguinal.

9. Clinically, these hernias are reducible, irreducible, non-inflamed, inflamed, strangulated, or their pedicle may be the seat of torsion.

10. Torsion[4] of the pedicle of a herniated ovary or of a hernated tube and ovary, an accident peculiar to, and not infrequent in, hernias of the uterine appendages, gives the same clinical symptoms and determines the same anatomical changes as are observed in the strangulated hernias of the uterine appendages.

11. We were able to collect eight times as many hernias of the inguinal variety as of all the other anatomical varieties put together.

12. Tubal, ovarian, and tubo-ovarian inguinal hernias are recent, old, or recurrent; are direct, interstitial[4] or intra-parietal, indirect or oblique. If indirect or oblique, they are either complete or incomplete. A few sliding hernias are on record.

13. All the bilateral tubal, ovarian, or tubo-ovarian hernias recorded in the medical literature of the last twenty years are of the inguinal variety. In bilateral hernias, both hernias may or may not show the same degree of development; they may have appeared simultaneously or one may have appeared a shorter or longer time before the other. They may show

similar or dissimilar clinical characteristics. When bilateral, one hernia may be irreducible and the other reducible.

14. All the hernias in which the complication "torsion of the pedicle" occurred were irreducible congenital inguinal hernias.

15. All the femoral tubal, ovarian or tubo-ovarian hernias recorded in the medical literature of the last twenty years were of the acquired type and appeared in advanced adult life. "Femoral hernia is essentially a hernia of adult life."

16. Hernias of the uterine appendages, in the absence of anomalies of the non-herniated internal genitalia or of the external genitalia, do not, if the herniated adnexa be of normal development, free from disease and reducible prevent conception, interfere with gestation, nor unfavorably influence parturition. Pregnancy can occur previous to, during, and subsequent to, the existence of hernias of this nature.

17. The etiology of hernias of the uterine appendages is that of hernia in general. As main factors should be cited:

1. All conditions associated with increased mobility of the uterine appendages:

a. Lengthening of the broad ligaments consecutive to repeated pregnancies.

b. Pathological relaxation of the ligaments due to puerperal subinvolution.

c. Abnormal length of the broad, ovarian, and infundibulopelvic ligaments.

2. All conditions that tend to increase the intra-abdominal pressure:

a. Sudden increase of the intra-abdominal pressure leads to hernia formation by overcoming the resistance offered by one or another of the weak points of the abdominal wall. Sudden increase of the intra-abdominal pressure may lead to the irruption of a tube, ovary, or tube and ovary in the sac of an old enterocele.

b. Occupations necessitating muscular efforts, associated with increased intra-abdominal tension, as the lifting or pushing of heavy weights, etc.

c. Physiological or pathological states which distend the abdominal cavity, which stretch the abdominal parietes, and widen the orifices normally present in the muscular and aponeurotic

layers of the abdominal wall. Enteroptosis, obesity, abdominal tumors, ascites, pregnancy, etc., can be regarded as predisposing and exciting causes to hernia production.

3. All conditions which weaken the abdominal wall: A hernia can occur wherever the parietal peritoneum is not sufficiently supported by the transversalis fascia and the other structures of the abdominal wall.

a. Acute or chronic disease debilitating the organism, especially such as cause great emaciation.

b. Obesity weakens the abdominal wall and increases the intra-abdominal pressure. The fat present in the abdominal wall, in the omental, mesenteric, and other peritoneal folds explains why obesity plays such a rôle in hernia development.

c. Traumatism. Most often the traumatism does not cause the hernia, but only reveals its existence. Among traumatisms must be mentioned abdominal operations and their sequelæ. Pathologic adhesions of viscera or omentum to the anterior parietal peritoneal wall near a hernial opening may act as a predisposing cause.

d. Enteroceles, epiploceles, and entero-epiploceles.

e. Feeble development or atrophy of the aponeurosis of the transversalis muscle, and of the conjoined tendon. This factor is an important one in direct inguinal hernia.

18. The herniated organ or organs may be free from all degenerative changes.[5]

19. The herniated organ or organs may be bound to the sac-wall or to each other; may be the seat of congestion, gangrene, hemorrhage, inflammation, suppuration, tuberculosis (primary or secondary), cystic and neoplastic disease (benign or malignant).

20. The herniated organ may be the seat of gestation.

21. The hernial sac and the herniated adnexa may be the seat of an inflammation, suppurative or other in character, which, owing to progression by continuity of surface, has extended upward from the vagina, presenting the following anatomical picture: Vaginitis, endocervicitis, endometritis, salpingitis or pyosalpinx, ovaritis and saccular peritonitis.

22. The hernial sac and the herniated contents may be the seat of an inflammation, suppurative or other in character, which, originating in the vagina or in the uterus, has reached the tube

and ovary by way of the parametrial and parasalpingeal connective tissue.

23. Pathological processes originating in the hernial contents may, owing to extension by contiguity of tissue, involve the sac and its overlying tissues.

24. Pathological processes, primarily involving the sac of the overlying tissues, can spread to the hernial contents.

25. The hernial sac and the herniated tube, ovary or tube and ovary can become the seat of an inflammatory or other pathological process originating in the associated hernial contents, epiploitis, appendicitis, gangrenous gut, etc., infection spreading by contiguity of surfaces.

26. The herniated tube, ovary, or tube and ovary, and the associated hernial contents may be free of disease or the uterine adnexa may be normal and pathological changes be present in the associated hernial contents: appendicitis, gangrenous gut, epiploitis, etc.

27. The associated hernial contents may be normal and the herniated uterine adnexa be the seat of morbid changes.

28. It is at times difficult, at times impossible, to determine whether the anatomical changes present in the herniated organ or organs, developed previous to or subsequent to the displacement of the tube, ovary, or tube and ovary into the hernial sac.

29. Truss treatment for hernias of the uterine appendages is not curative, is often productive of discomfort, and not infrequently interferes with the nutrition and development of the herniated tube or ovary.

30. Women who suffer from any form of hernia should be carefully watched before, during and after their confinement, so as to prevent or rather minimize any undue strain upon weak regions of the abdominal wall. These women, at the close of lactation or towards the end of the first year following their confinement, should, in the absence of contra-indications, be subjected to an operation for radical cure of the hernia.

31. After the second year of life, spontaneous cure of hernias of the uterine adnexa is rare and can occur only if the hernial contents are easily reduced and easily kept reduced.

32. In the female, all hernias irrespective of anatomical site, clinical condition, or of nature of contents should, in the absence

of a constitutional state contra-indicating operations of election, be subjected to an operation for radical cure.

33. We advise that all hernias of the uterine appendages,[5] whatever be the age of the patient, be, irrespective of anatomical site or size, subjected to an operation for radical cure:

a. If the hernia be irreducible.

b. If the hernia be strangulated.

c. If the pedicle of the herniated organ or organs be the seat of torsion.[6]

After the age of two years:

d. If the hernia be bilateral.

e. If other hernias be co-existent.

f. When hernia cannot be painlessly, completely and permanently kept reduced.

g. If organs other than the uterine appendages be also present in the same hernial sac.

h. If the wearing of a hernial truss causes pain or aggravates the symptoms.

i. If the patient has to be subjected to ether, chloroform or other general surgical anesthesia for the performance of an operation of election, double advantage can be taken of this anesthesia, and an operation for the radical cure of the hernia performed.

j. If patient is exposed to pregnancy.

34. Clinical conditions so closely simulating hernias of the uterine appendages that a positive diagnosis without operation appears impossible, should be subjected to operative treatment. Only benefit can be derived from adherence to this rule. A diagnosis is established, and a cure is effected.

35. In hernias of the uterine appendages, as in all other hernias, the ideal time for operation is previous to the development of degenerative or other pathological states in the herniated organ or organs, and previous to the occurrence of any of the various complications incident to hernias. Early operations give the most satisfactory results.

36. The mortality of operations for the radical cure of hernias, if performed at an opportune time and by a rapid operator, competently assisted, is practically nil.

37. To be effective, operations for radical cure of hernias must well fulfill two essentials: The suppression of the sac and the strengthening of the wall through which the hernia has

escaped. In all herniotomies, the sac should be incised and the hernial contents examined. In the female, the inguinal rings are comparatively small. They can, without inconvenience to the patient, be closed.

38. Important operative points:

a. Always wear and have the assistants wear rubber gloves.

b. All ligatures and irremovable buried sutures should be of absorbable material.

c. In inguinal hernias always divide the aponeurosis of the external oblique muscle to an extent sufficient to give a good exposure of the inguinal canal, and of its contents. In the female, the inguinal canal in its normal state and after an inguinal hernia operation, in its restored state, should, outside of a few arterioles and nerve filaments, contain nothing but the round ligament, a structure much smaller than the spermatic cord. This round ligament comes from the muscular structure of the uterus; it finally becomes lost in the labium majus. In a hernia operation, the round ligament, if not the seat of disease, should never be sacrificed.

d. Always make a high and careful dissection of the hernial sac from the surrounding tissues, and especially from the round ligament to which it is often quite intimately adherent.

e. Always open the sac and determine by direct inspection and palpation the nature and state of the hernial contents.

f. After reduction or ablation of the hernial contents the sac is to be transfixed and ligated as high as possible. Sac is then removed flush with the peritoneal cavity. This high and thorough removal of the sac is most important.

g. Never sacrifice the round ligament; it is harmful to the statics of the uterus. Never transplant the round ligament; it is unnecessary. No drainage. After operation, no truss should be worn; a truss does not support the scar; it weakens it.

39 The normal herniated tube or ovary should never be sacrificed. These organs have an important rôle and in the absence of marked structural impairment should be returned to the abdominal cavity.

40. These organs when herniated should be removed, if they be the seat of:

a. Unavoidable or actual gangrene.

b. Benign neoplastic disease.

c. Malignant neoplastic disease.

d. Voluminous cyst formation (unilocular or multilocular).

e. Malformation or incomplete development (Hydrosalpinx).

f. Suppurative inflammation.

g. Hematoma or interstitial ovarian hemorrhage.

h. Seat of tubal gestation, previous or subsequent to rupture of fœtal sac.

i. Tuberculosis limited to or extending beyond the herniated organ.

j. Distortion beyond recognition.

k. Such pathological changes as prevent function.

41. Until we are better informed as to the frequency and nature of true and false hermaphroditism, removed herniated uterine adnexa not having a distinctive structure should be subjected to a microscopical examination. This will avoid mistaking testicular for ovarian tissue, and vice versa.

42. In the treatment of strangulated sciatic or gluteal, obturator and femoral hernias of the uterine appendages, in which the hernial sac also contains gangrenous gut, a double operation is almost always indicated: a laparotomy for the repair of the intestinal lesions, and a herniotomy for the radical cure of the hernia.

43. The herniated tube, ovary or tube and ovary can be removed through the usual herniotomy incisions. The operative steps for the removal of these herniated organs correspond, short of a laparotomy, to the technic ordinarily ued in salpingectomy, ovariectomy, and oophorectomy.

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CERVICAL MYOMA; REPORT OF AN UNUSUAL CASE.*

By M. A. SHLENKER, M. D., New Orleans, La.

In a previous communication before this society on this subject, I referred to the fact that cervical myoma occurred much more frequently than we are led to believe and offers innumerable difficulties in its removal.

Reviewing the literature on this subject, it is about agreed that cervical myomata occur in about 5% of all myomata, that they offer great difficulties, as a rule, in their removal, especially when located deep in the pelvic cavity, where their removal menaces the ureters and rectum. They are etiologic factors in the production of dystocia during labor, their presence producing an obstruction to the delivery of the fetus. These tumors grow from any part of the cervix to and a large percentage of the cases produce, among other symptoms, dysmenorrhea, metrorrhagia and menorrhagia. Smead (*Amer. Journal of Obs.*, 1911) states that pendunculated cervical unions are rare and that tumors located in the cervical wall follow in their growth in the direction of least resistance. Those growing intracervically uniformly expand the cervix, while those growing on the lateral, anterior, or posterior aspect elongate without expanding on the cervical canal.

Sutton (*Lancet,* 1904) says in two-thirds of the cases the tumor is usually solitary. They may attain considerable size; the largest one being recorded has dimensions 30 cm. in length, 12.5 in breadth. This tumor is on exhibition in the museum of the Royal College of Surgeons, Edinburgh.

Cases have been reported where the cervical tumors of the anterior wall have grown so as to have forced the bladder from within the pelvic cavity, producing thereby innumerable vesical symptoms. Those situated on the posterior wall produce pressure symptoms on the rectum and interfere with the free evacuation of the lower bowel.

According to Rabinowitz, in 114 collected cases of cervical myoma the distribution of the tumor was as follows: In 45 cases the myoma was found on the anterior lip of the cervix,

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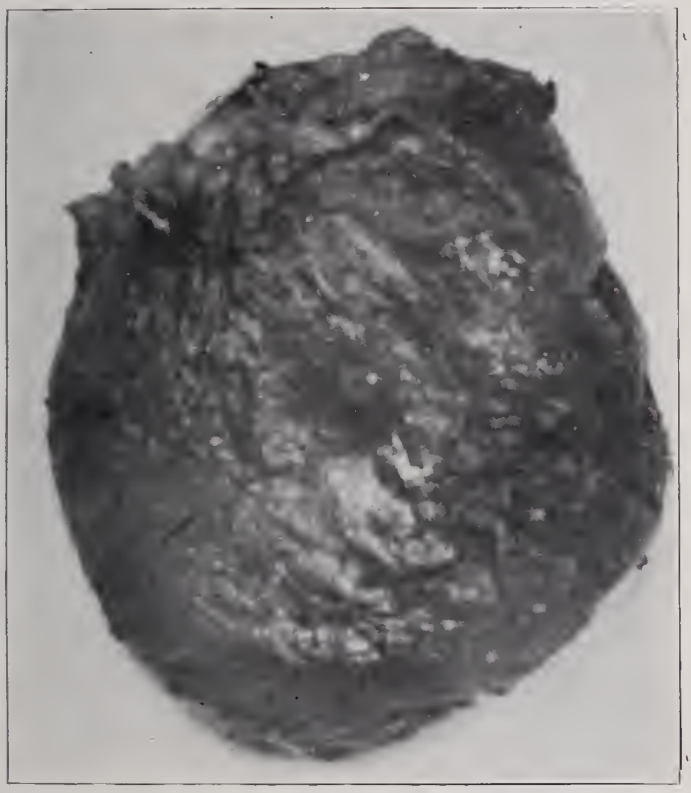


ILLUSTRATING DR. SHLENKER'S ARTICLE.

and in 55 cases it was located on the posterior lip, while the lateral implantation was observed in only 14 cases.

A little before midnight March 14, 1915, I was notified that an emergency case had been admitted to my service at the Charity Hospital, having been brought in by the ambulance. The patient was bleeding profusely from the vagina, with a clinical diagnosis of inversion of the uterus. The intern reported that she was suffering badly from shock occasioned by the loss of blood, and that immediate action was necessary.

Upon my arrival at the hospital I ordered that the patient be brought to the aphitheater and prepared for an anesthetic and whatever operative procedures that might be required. Before proceeding with the anesthesia I questioned the patient in reference to her condition, and her replies were somewhat unintelligent and incoherent. Her general appearance was that of one who was badly shocked, her features pinched, her face pale, her pulse ranging from 150 to 160 and thready, and the extremities cold and clammy.

Upon examination of her genital organs I observed protuding from the vaginal orifice a mass which had all the appearance of an inverted uterus, and which bled readily when manipulated. I inspected the mass, searching same for the tubal orifices, which I at first thought I observed, a probe entering readily on one side of the supposed tubal opening. Upon further investigation, examining the patient digitally, I felt the cervix uteri, and within the vagina a mass with the contour of that of the body of the uterus. With vaginal retractors I could now readily observe the cervix uteri acutely flexed to the right, and growing to the left side of the cervix and attached to it by a broad base this tumor mass—which was heretofore considered the uterus. With a uterine probe I entered the os uteri without any difficulty, thereby convincing myself that we were not dealing with an inverted uterus, but that of a cervical myoma, which, according to my interpretation had ruptured spontaneously from the left side of the cervical wall, as shown by the sketch herewith presented. I excised this tumor-mass, which was deeply implanted in the cervix, and closed up the cervical wall with interrupted chromic catgut sutures, and at the same time curetted the uterus and packed same with a strip of iodoform gauze.

The patient's recovery was uneventful, and I beg to submit to

you herewith a photograph of the specimen with a pathological report of Doctor H. W. Wade:

The specimen consists of a soft, pliant mass roughly the size of the fist, measuring 9.5x11x5.5 cm. The surface is irregular in outline, and at two points shows distinct lobulation. This is due to the irregular interlacing of strands and masses of a fibrous tissue which shows dark red through a thin pale connective tissue layer. This capsular layer is seen over most of the surface. It is absent, however, over one area, which shows fragmentation of the tumor surface.

On section the entire mass is seen to be quite uniform in composition. It is coarsely fibrous, tough, dark red, and on tearing tends to separate into coarse strands and fibres. As a whole, the tumor is very vascular, and the entire tissue is infiltrated with blood. Areas are seen which have the appearance of solid blood-clot, but on pressure these prove to be firm and resistant.

Microscopic sections show the tumor to be a typical leiomyoma, which contains a large amount of connective tissue in certain parts. One section shows a normal condition with respect to the muscle and connective tissue, and no increase of vascular channels. Other sections, however, are usually vascular and in areas show marked diffuse hemorrhagic infiltration, edema and in places accumulation of polymorphonuclear leucocytes. Here the tumor proper shows varying amounts of hyaline degeneration of the connective tissue.

Diagnosis: Fibro-leiomyoma (Fibroid), in the hyalin degeneration. Acute inflammation (infiltrative), hemorrhage and edema.

The history of the patient is as follows:

Ruth M. admitted to service No. 2, ward 53, white, age 53, and a native of Louisiana. Family and previous history has no clinical bearing on this condition. Menstrual history. Periods first made their appearance at 13, and the 28 day type; she has always been more or less regular, but complained that the quantity has always been more or less profuse, usually lasting seven days or more.

The past three months the periods have been more irregular, lasting much longer and more painful than usual, and that the last term persisted throughout the entire month, during which time she passed many large clots. She has been married fourteen years and has had three full term children and two miscarriages, both of the latter occurring three years ago. Regarding her present illness she relates

the following. Three days prior to her admission to the hospital she was taken suddenly ill with excruciating pains in the left iliac region which caused her to faint, remaining unconscious for a short time. These pains persisted after she was placed in the bed, growing constantly worse, and were as she expressed it "like labor pains." A midwife was sent for, who on her arrival informed her that she was about to give birth to a child. The pains continued with short interval of rest for several days, and she observed while sitting on the toilet a large mass was protruding from her vagina, which was the size of a fist. Immediately after this mass was observed the ambulance was sent for and the patient brought to the hospital.

After the removal of this tumor I made a subsequent examination of the patient and found the uterus enlarged and irregular, indicating the possibility of other tumors being present. I informed the patient of the possible presence of other growths and urged permission to do a more radical operation, but my overtures were without avail. She returned home apparently well. Some time later I learned from her family physician that she had had irregular uterine bleedings since her return home, which in a way confirms my suspicion of other uterine growths being present.

This case which I have reported is quite unique, first, as to the location of the tumor being situated in the left half of the cervical wall near the junction of the vaginal implantation of the cervix; secondly, by its connection with the cervix through a broad base; and thirdly, the history of its spontaneous expulsion; and lastly, the confusion of this tumor with that of an inverted uterus.

CLINICAL REPORTS OF CASES PRESENTING FEATURES OF UNUSUAL SURGICAL INTEREST.*

(*Concluded from October* JOURNAL.)

By RUDOLPH MATAS, M. D., New Orleans.

Observation 3. Malignant disease of the left testis; orchidectomy with complete removal of the spermatic cord up to the internal inguinal ring, followed twenty-seven days after the castration by Chavassa's operation for the removal of metastatic retroperitoneal glands in the preaortic and pararenal areas.

Mr. H. M., age twenty-eight years, merchant, native and resi-

*Extracts from a "Stereopticon Clinic," illustrated by lantern slides and presented by invitation at the 48th Annual Meeting of the Mississippi Medical Association, Hattiesburg, Miss., May 11-13, 1915.

dent of Demopolis, Alabama, was admitted to the Touro Infirmary December 19, 1914. Married six years, no offspring; good hereditary antecedents; a robust, muscular, vigorous and well-proportioned young man, of temperate habits. He has been well all his life. Had gonorrhœa at the age of fourteen years; a slight attack which lasted a short time. Had another attack in 1904 from which he apparently recovered completely. He has no knowledge of syphilitic infection, and the Wassermann and Tchernogubow tests are both negative.

History of Present Illness: The patient was in perfect health up to last April (1914) when, in the act of copulation, he experienced severe pain in the left testicle, which disturbed him considerably at the time, but soon passed off and he thought no more of it. Three months elapsed when (last July) he began to suffer slight pain in the left testicle, caused, as he thought, by the striking of his scrotum against the thigh. The testicle was enlarged at the time, but not as much as at present. He does not know just when the swelling started. The pain never was acute and he now complains of only a dull pain in the groin, due to the traction of the enlarged testis.

The testicle is sore and sensitive to pressure. Dr. Bailey, his family physician, whom he consulted in August, last, and who is now with the patient, is not able to tell whether the epididymis or body of the testicle was first involved. He believes that both were enlarged at the time. The testicle has gradually grown larger and harder.

He has taken KI. and Hg. and other medication, but the testicle has steadily grown worse (larger). If the initial pain which he felt in April is regarded as the beginning of the disease, this has lasted nine months up to the date of admission into the Infirmary.

Physical examination on December 18, 1914, by Dr. Matas: Patient is in good physical condition. Weight, about 150 pounds; height, 5 feet 11½ inches.

On examination the scrotum is found enlarged and filled with a globular tumor which has incorporated the left testicle in its mass. The affected left testicle is about eight times larger than the right. The right testis is normal. The testicular mass is rather pyriform than globular, with the narrow part corresponding to the epididymis and the larger part to the tes-

ticle proper. The testis and epididymis are fused together in an indistinguishable mass. The cord is thick and hard and can be traced to the internal inguinal ring.

The testis is sore and tender to the touch, indurated, comparatively smooth and even, and without notable nodes or projections. The hardness is almost stone-like in character, except at the lower pole, where it is softer and semi-fluctuant. There is no edema of the scrotum or adhesions of the skin to the mass, but the weight of the enlarged testicle causes the scrotum to hang very low, even with the junction of the upper and the middle third of the thigh.

The abdomen along the aortic tracts and in the lumbar region reveals no nodules or areas of hardness on palpation.

Rectal examination shows a moderately enlarged prostate with the left vesicle harder and a little larger than the right. No nodules or distinct masses are perceptible. The right vesicle is normal. No secretion was obtained by a systematic massage of the prostate or stripping of the vesicle and deep urethra. The inguinal glands are alike on both sides; not very palpable.

The first glass of urine is cloudy and the second more so. It shows a little pus, a trace of albumin, and total absence of spermatozoa. Repeated examinations for tubercle bacilli by the usual methods and by antiformin, are always negative. The Wassermann, as previously stated, is also negative. These examinations appear to eliminate a syphilitic, a tuberculous or a purely gonoccocal disease, and it was concluded that the enlargement of the testicle was caused by a malignant neoplasm. The enlarged vesicle was probably the result of an old gonorrheal vesiculitis. An exploratory incision into the testicle was decided upon, which should be followed by immediate castration if the gross appearance confirmed the diagnosis.

The operation was performed under ether, on December 19, 1914. An incision five inches long was made, extending from the upper level of the scrotum up to the internal inguinal ring. The testicle was delivered easily and exteriorized out of the incision from one pole to the other, showing that the neoplasm was of an infiltrating variety, granulomatous with broken-down centers; and some hard cartilaginous nodules ill-defined, and rather diffused with the exception of the lower pole, in which normal testicular tissue was recognizable. The testicle showed

that the bulk of the mass formed an irregularly-defined tumor larger than a big pecan nut, occupying chiefly the upper pole of the organ, and was soft, degenerating into the center. Beyond the testicular tumor, the body of the testicle was comparatively normal on section. There was quite a zone of edema in the cortex of the gland. The cord was edematous. In view of these unmistakable signs of malignant disease, it was decided to castrate at once, and this was done with as much thoroughness as possible.

The testis and cord were excised as high up as possible, the vas deferens being followed beyond the internal ring into the subperitoneal tissue, close to the bladder, where it became thin and normal.

The spermatic vessels were also severed and ligated beyond the internal ring.

The wound healed promptly from the operation, and the patient was discharged from the Infirmary on December 23, 1914, with the instruction to return within two or three weeks, when an attempt at a radical extirpation was to be made, in order to excise the primary lymph zone of the testis and any metasttatic deposits that might have developed at the usual seat of metastasis, at the junction of the spermatic with the renal veins (on the left side) in the retroperitoneal space.

The microscopic examination of the testicle was conducted in the pathologic laboratory by Dr. Lanford, who reported the diagnosis of mixed tumor or terato-blastoma of the testicle with adeno-carcinoma as the predominating type. There was an extension upwards into the vas deferens.

The report of the microscopic findings made me still more insistent upon the patient returning for a secondary and more extensive operation, with a view of following up the secondary lymphatic route of metastatic infection.

In accordance with my instructions, the patient returned to the Infirmary on January 13, 1915, and was operated on the 15th, or twenty-seven days after the castration, the operation being performed under gas-ether anesthesia, administered by Dr. Caine.

The operation, January 15, 1915, was carried out precisely on Chevassu's lines, as shown in the accompanying drawing. The continuous incision carried along Poupart's ligament to the

Obs. 3. Fig. 1.—Photo-micrograph of a section of the tumor of the testis removed from Mr. M. Section shows a mixed tumor (terato-blastoma) the matrix is largely of sarcomatous type with many islands of embryonal epithelial cells arranged in glandular form (adeno-carcinoma.)

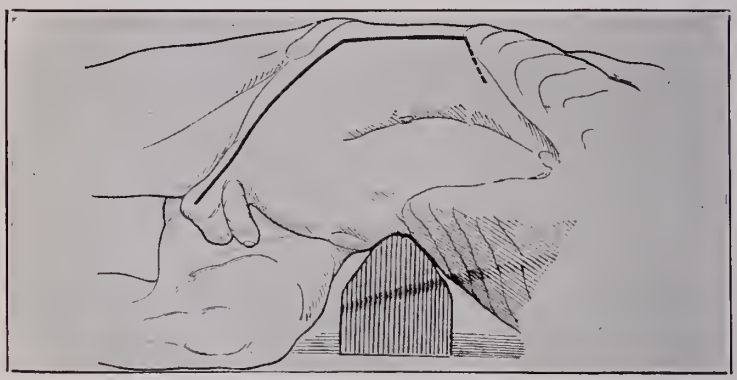
A.—Remains of seminiferous tubules.

B.—Islands or nests of epithelial cells (adeno-carcinoma.)

C.—Sarcomatous-matrix (round cell type.) From sections prepared by Prof. Lanford (Laboratory of Surgical Pathology, Tulane University.)

(Note) The metastatic pararenal and aortic lymph nodes showed the same appearances with additional large islands of embryonal cartilage.

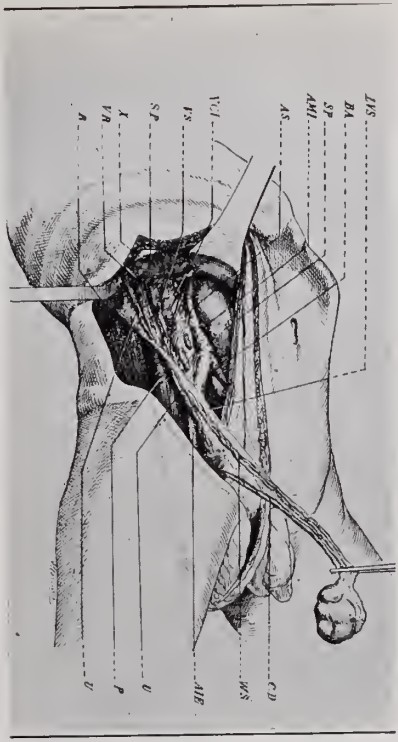
ARTICLE OF DR. MATAS.



Obs. 3.—(CASE OF MR. M.)—MIXED TUMOR (TERATO-BLASTOMA OF THE TESTICLE.)

Fig. 2. (From M. Chevassu, Revue de Chirurgie, Paris, May, 1910) shows external lines of incision for the extirpation of the right testicle with cord, spermatic vessels and tributary lymph tracts. Also the position of the patient to obtain the largest ilio-lumbar exposure. In the case of Mr. M. the **left** testis was involved and the lines of incision should be reversed.

ARTICLE OF DR. MATAS.



Obs. 3. Fig. 3.—From Chevassu (loc. cit.), showing the retraction of the abdominal wall and reflected peritoneum with the intestinal mass to the inner side with exposure of lumbar lymph nodes.*

*The testis is isolated and lifted with the retroperitoneal connective tissue together with the spermatic artery and veins traced up to the renal veins and aorta. The external and common iliacs are cleared, exposing the ureter and aortic bifurcation where a careful search is made for lymph nodes. The aorta is traced up and cleared of all glands anteriorly and laterally. In disease of the right testis the same incision is adopted but the vena cava is exposed and cleared. In the case of Mr. M. the left testis was involved and the attack was directed chiefly on the aortic side. The spermatic artery and veins are ligated and cut off at their origin. It is best to do a block dissection from the inguinal canal up, removing the glands which are usually easily recognized with the retroperitoneal connective tissue. It should be remembered that the most miportant terminal lymph nodes of the testicular lymph system are grouped about the terminus of the spermatic into the renal veins (4 or 5 glands). It was here that we found the largest infected mass in Mr. M.'s case. On the left side, they lie between the renal pelvis and the aorta. On the right side, on the vena cava itself or on its inner surface between the cava and aorta. Other groups of secondary importance are those which lie at the aortic or caval bifurcation. Others lie in isolated nodes on the aorta or cava or, next to these vessels, from the bifurcation to the origin of the renal vessels.

Another solitary gland is also often found infected at the crossing of the ureter over the external iliac vein (Zeissel and Horowitz, Most and Cuneo.)

Another chain of small nodes is found along the inguinal course of the spermatic tract (Villar and Salabert; Cuneo) hence the importance of making a most thorough extirpation of the cord including the connective tissue sheath of the spermatic vessels—from the scrotum up.

ARTICLE OF DR. MATAS.

anterior superior spine, then perpendicularly up to the left costal arch, and forward up to the cartilage of the tenth rib. All the structures were divided down to the peritoneum. Beginning from below, the epigastric vessels were ligated close to their origin in the iliacs. The spermatic vessels were also recognized; unusually small in size, but unmistakable, and traced upward toward the kidney. The ureter, likewise, was recognized and followed up to the kidney. The peritoneum was then peeled back beyond the brim of the pelvis. The external iliac vessels were exposed and then the origin of the internal iliac at its bifurcation, where a careful search for glands was made; but none were found. The hollow of sacrum was now exposed and a search for glands made at the bifurcation of aorta, but, again, none were found. The peritoneum was reflected further up toward length of aorta, when a dark grayish mass was revealed just within the inner border and below the lower angle of the lower pole of the left kidney. This mass proved to be a very adherent neoplasm which was tensely filled with soft grumous, brain-like matter. It ruptured and allowed the semi-solid contents to escape before it could be shelled out. The mass itself was about the size and consistence of a large oyster and was evidently a lymphatic gland undergoing neoplastic degeneration and softening. This mass was resting on the psoas muscle and left crus of the diaphragm, and was crossed over by the pelvis and ureter of the left kidney. Three other glands, each about the size of a large pea, which were imbedded in prevertebral and pararenal fat, and lying in contact with the left border of the abdominal aorta below, and on the renal artery, were removed. The kidney was isolated, the ureter traced to the pelvis and the left spermatic vesssels followed up to the left renal vein and abdominal aorta. These were ligated close to their termination and removed, the ureter being very carefully protected throughout the operation.

A great deal of oozing, probably venous in character, occurred in the extreme upper end in the vertebro-costal groove, which seemed to be due to the attachment of vessels (lumbar veins) to the neoplastic and adherent glands. The control of this bleeding by forceps and packs was the most tedious and annoying part of the operation. Several bleeding points were controlled by packs of gauze. The kidney and its capsule of fat

were lifted up with the peritoneum. The reflection of this membrane progressed, inwards, from the abdominal line of incision to the aorta.

The rest of the operation was not difficult, except that, in spite of the great length of the incision, it was found hard to denude the upper aorta so as to make a thoroughly clean dissection at and above the level of the renal arteries.

The abdominal wall was then sutured with a triple layer of chromic catgut, for the muscles and aponeurosis, and the skin suture was reinforced by numerous silkworm sutures. The gauze packs in the retroperitoneum were removed and a drain was left in the retroperitoneal cavity, which escaped externally through a separate incision in the ilio-lumbar space in Pettit's triangle. Before closing the incision at Poupart's ligament a group of enlarged inguinal glands was also removed.

During the operation, the patient was lifted in the kidney position with the Koenig attachment, and was kept in the Trendelenburg position, being turned to his right side so as to widen the left ilio-costal space as much as possible.

From the beginning to the end of the operation, which lasted from 11:28 a. m. until 1:43 p. m. hypodermoclysis with a three per cent glucose solution in the mammary regions was continuously kept up. The pulse gradually rose from 112, on taking the anesthetic, to 150, at the close; but it was always of good volume. When the patient was returned to his bed, the pulse rapidly fell to 110 and the next day was 98. He did very well and his condition gave us no anxiety at any time; but his convalescence was retarded by a suppuration of the lower angle of the wound, caused by an infection of the retroperitoneal connective tissue in the iliac fossa. He was able to get about and was healed when discharged on February 12, or twenty-eight days after the operation. He returned to his home in Alabama, and for two weeks did well, when he began to have an evening rise of temperature (up to 101°) which continued until he came for the third time to the Infirmary, on March 12, one month after his last discharge. The temperature was accounted for by a deep lumbar abscess, which was drained by a puncture of the inguinal portion of the scar, with great relief of symptoms. Fearing that he might have other complications,

the patient remained in the Infirmary until May 3, when he was discharged for the last time.

At the time of his departure, it was evident that the patient had developed a large pleuro-pulmonary metastasis. He coughed and had constant intercostal pains. Distinct pleural friction murmurs were heard, with areas of tubular breathing and subcrepitant rales in both lungs, especially the right. Signs of a moderate effusion soon followed, which we found to be of a sero-sanguinolent character. The centrifuged fluid showed a great mass of epithelial cells and others of an embryonal neoplastic character. A radiograph of the chest, taken just before his departure, showed plainly that there were several large tumor masses apparently attached to the posterior thoracic wall, pleura and mediastinum. The patient himself believed that he had been attacked by tuberculosis, so closely did his symptoms suggest to the unprofessional observer a typical galloping consumption.

He died at his home in a state of marasmus and exhaustion, on May 30, one month after thoracic metastasis had been recognized.

COMMENTARIES:

To summarize the essential facts of this case we find: first, that a mixed tumor of the testis developed rapidly and attained unmistakable characteristics in the course of nine months, dating from its first appearance.

Castration, including the spermatic cord beyond the internal ring, was performed on December 19, 1914, nine months after the first appearance of the disease. On July 15, or twenty-seven days after this thorough castration, Chevassu's operation for the removal of the primary lymph zone or pre-aortic and perirenal metastases was performed.

This operation demonstrated that very extensive glandular metastases had already occurred. All the visible glands were removed; the pathologist, Dr. Lanford, reporting an identical histological structure, *i. e.*, mixed tumor, in the metastases as he had found in the testis.

The patient recovered from this very extensive and serious operation. On May 1, or scarcely four months after this operation, it became quite evident and demonstrable that many large

metastatic deposits had occurred in the posterior mediastinum, pleura and lung. On May 30, the patient died, in consequence of the thoracic metastases.

Thus death occurred about thirteen months after the first signs of the disease had appeared in the testis, six months after castration; and five months after the attempt at radical extirpation or Chevassu's operation.

I have gone into some detail in reporting this, in many respects, remarkable and instructive case, not only because it is a contribution to a comparatively new field of surgery, which is still on debatable ground, but because it offers many suggestive features of imporatnce to the general practitioner as well as to the surgical specialist.

It is not my intention to engage in a general discussion of the subject of the proper treatment of malignant disease of the testicle. Such a discussion would be out of place in presenting a mere clinical report of a group of individual cases; but in projecting the slides, which I am showing on the screen,* I feel justified in directing your attention to a few important points.

In addition to the intrinsic interest which attaches to the subject, I may say, in passing, that this is one of the very few instances, if not the first in this country, in which a systematic effort has been made to extirpate the metastatic deposits of the primary lymph zone of infection in testicular cancer, following the lines laid down by that most thorough and conscientious student of the subject, Maurice Chevassu.

It is true that John B. Roberts, of Philadelphia, was the first to undertake, in 1901, the removal of the lumbar lymph nodes in a case in which clinically they were not involved. "He elected a median abdominal incision, opened the peritoneum and encountered insurmountable difficulties, and his patient died in a few days from peritoniitis." As told by Dr. Frank Hinman, of Baltimore, in a most recent and comprehensive study of the subject (*A. M. A.*, December 5, 1914, Vol. 63), Robert's misfortune has seemed to discourage all other American surgeons, as none has since undertaken the removal of the gland area. According to Hinman's latest study, the radical attempt at extirpation of

*Only a few of the many slides exhibited at the meeting showing the histological peculiarities of the mixed tumors of the testis and the steps of the so-called radical operation are reproduced in the illustrations which accompany this paper.

testicular cancer on the lines laid down by Chevassu in 1906, has been performed forty-one times in France, four times in England and once in Italy. The systematic operation devised by Chevassu is based on the universally accepted principle in the treatment of malignant disease, which is, to excise widely the local growth, to make a clean dissection of all the lymphatics which drain the area, and to remove the primary chain into which these lymphatic vessels empty. This is the principle which has undoubtedly improved the mortality of cancer of the breast and in the treatment of cancer in all accessible lymph tracts of the body; the Wertheim operation for cancer of the uterus being somewhat analogous to the radical operation for cancer of the testicle. But as in the general adoption of the Wertheim procedure there have arisen many and serious objections to its practical application, so do we find that there has been still much hesitation in accepting the same principle in the treatment of cancer of the testicle. While the logic of the principle is fully recognized, the seemingly enormous traumatism involved is appalling to many, just as many inexperienced surgeons halt at the difficulties of a Wertheim or Jonnesco operation.

As with the Wertheim operation—regardless of technical difficulties,—the real question at issue is to what extent are the results thus far obtained by the radical or Chevassu operation superior in the prolongation and saving of life, to those of simple castration?

In the first place, what are the results that may be expected from simple castration for malignant disease of the testis?

In answering this question, the statistics are of little value, unless the type of growth is accurately ascertained and the end results carefully recorded for a sufficient number of years. In this respect, the profession is profoundly indebted to Chevassu for his most patient and critical researches. Realizing that castration for malignant diseases of the testis is justly regarded as almost a futile operation by the vast majority of surgeons, who seldom record a permanent cure—no more than simple mammectomy for cancer of the breast accomplishes a permanent cure for this type of malignant disease,—he collected in 1910 a carefully studied group of one hundred cases of simple castration. He found that, of these, only 19 per cent recovered and survived a period of four years and that 81 per cent had died

within the test period. In analyzing these cases, he found that fifty of them were mixed tumors, or teratomata, (by far the most frequent type of testicular cancer), and that in this group 94 per cent had died within the test period and only 6 per cent had survived it. The seminomes, or seminal epitheliomas or embryonal carcinomas, were forty-seven in number, and of these 25 per cent recovered and 75 per cent died. There were only three sarcomata in the group (formerly considered the most frequent type of testicular malignancy) and all these died, or 100 per cent mortality. (Chevassu; *Revue de Chirurgie,* Tome XLI, April and May, 1910.)

Hinman, in his careful study of thirty patients treated by castration at the Johns-Hopkins Hospital, shows that a cure from castration can be expected in only 15 per cent of the cases, and that the mortality rate is 85 per cent. This tallies with my own quite extensive personal experience.

Now, what can be expected of the radical operation?

While the number of cases operated on Chevassu's lines are comparatively few, these have been carefully studied, and inasmuch as the majority have been operated before 1911, sufficient time has elapsed to justify some comparative conclusions.

To quote the researches of one of the most recent compilers, O. Moscaranhas (Paris thesis, July, 1912), we find that there were thirty-one cases with three operative deaths, or 9 per cent operative mortality; twenty-seven operative recoveries, of which four were found to be inoperable on account of too extensive metastases, or 14.3 per cent inoperable. In the twenty-seven operative recoveries, there were seventeen recoveries which had survived over three years, or 53 per cent recoveries.

Hinman, in his most complete study of the reported cases of the radical operation, which amounted to a total of forty-six cases (up to December 5, 1914) shows that the combined mortality for this extensive and seemingly formidable operation is only 11 per cent, which, I believe, is a better showing than can be made for the Wertheim operation for cancer of the uterus.

"Sufficient time has not elapsed and the cases are so scattered that it has not been possible to get the ultimate results in all of the patients treated radically; 46 per cent are alive; one for five years; one for four years; five for about three years; two for over two years, and eleven for one year or less. There is a

probable cure in at least four cases which had the lumbar glands invaded with cancer at the time of operation. Simple castration could not have benefited any of these patients, and their cure is directly attributable to the early and clean removal of the affected lymph area.

The chief lesson gathered from my personal experience, as well as the study of the literature, is that the majority of the cases come to operation when the disease is too far advanced to expect a cure by either castration or the radical operation (clearly demonstrated in the observation I have reported.)

No operation can prove of permanent value when the lumbar or preaortic glands can be plainly palpated. My patient's case clearly shows that when castration was performed, nine months after the first evidence of disease in the testis, the lumbar glands were already very extensively involved, though not sufficiently to permit their recognition by palpation, though the patient was thin enough to permit of more than usual exploration by this means.

While the statistics at present available are not sufficient to justify decisive comparative conclusions, the results in some of the reported cases undoubtedly prove that quite a number of otherwise doomed individuals have been saved by the radical operation, even when impalpable metastases had occurred.

It would seem logical that dubious cases of testicular tumor should be explored promptly by direct section of the testicle, more often, and at a much earlier stage than is usually now done, and that once the diagnosis is positively made, that the best chance for permanent cure would be by clearing out the primary lymph nodes by the procedure now recognized as the Chevassu operation.

N. O. Medical and Surgical Journal

Editorial Department.

CHAS. CHASSAIGNAC, M. D. ISADORE DYER, M. D.

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CHIF.

The big fair for the benefit of the Charity Hospital is over and we hope the final returns will show that a substantial sum will accrue to the hospital, as it is badly needed and the amount of energy expended should produce results that are worth while.

The enthusiasm of the public shows that the cause was considered good and that the efforts of the hospital board in the direction of progress have been pretty generally appreciated.

We have in a modest way tried to serve the cause, but, now that all is done and it can do no harm to say what we think, we must state that we had to salve our conscience with the excuse that an emergency was being dealt with.

In principle the whole thing was wrong. A state institution should not have to pass around the hat, in the first place. This phase of the question has been talked about and written about enough; we need but refer to it. What is perhaps more serious is that begging should be done for an institution whose legal status is such that apparently any citizen of Louisiana, no matter what his personal fortune may be, has a moral and a legal right to claim services therein and therefrom free.

We say this is apparently the case because that is the latest ruling on the subject made by an attorney of the hospital. We note with satisfaction that a higher ruling is being sought for by the Orleans Parish Medical Society, and we feel sure that the Board of Administrators of the Hospital will do all in its power to obtain an authoritative decision.

The point must be settled one way or the other. Our private opinion is that it was not the intent of the founder of the hospital that any but the needy should be taken care of; nor that the State of Pennsylvania should have given material assistance to the institution except under the belief that it was to help the poor; neither that it could have been named the *Charity* Hospital if its province had been to give free service to those who could take care of themselves. Still, we are not now arguing the point. We are backing the medical profession in their request to have the matter settled.

The sovereign people may do what it pleases with its own. It may decree that it shall be with hospitals as with schools. That just as the State is now expected to give every child an education, so must it conserve and restore the health of each of its citizens.

But if that be the decision, then the people must also provide the means, and in rapidly increasing amounts, too, and no more begging must be done in the name of sweet charity.

THE NEW ORLEANS CHARITY HOSPITAL.

The New Orleans Charity Hospital has been the refuge of the sick and injured from all of the State of Louisiana and from most of the neighboring states as well. Even to-day, there is no hospital of any considerable size south of St. Louis, and there drift in cases of all sorts which might find aid elsewhere.

It has been a very long time since the State of Louisiana sup-

ported the Charity Hospital directly, and though the Hospital is administered under state regime, its revenues come from other sources outside of state funds, almost as much as they do from the state.

This fact justifies the current discussion as to the function of the Hospital so far as the public of Louisiana is concerned, and a general opinion prevails that the hospital service should be restricted to the poor, and the poor of Louisiana only.

There is some consideration to be taken of the medical staff, also, who now give their service gratis to the Hospital, although they pay a license to the state to practise medicine, and in rendering such service to the well-to-do who use the Hospital they thereby discount the opportunities the license they buy should protect.

In spite of the large reforms in administration during the past three years, the Charity Hospital of New Orleans has done well, as a recent statement would go to show. The admissions to the Hospital have increased since 1909 from 9,576 to 16,742 in 1914, and the cost of administration has increased from $203,047.00 to $297,286.00, or the maintenance has increased by only a little over 40% while the admissions increased nearly 75%.

A striking statistical deduction is afforded by the comparison of the New Orleans Charity Hospital with institutions elsewhere:

COMPARISON OF HOSPITAL COSTS—1914.

Hospital	No. Beds	Admissions	Bed Days	Per Capita
Bellevue Hospital	1,379	42,185	495,108	1.75
Louisville City Hospital	450	4,510	76,285	1.74
Boston City Hospital	995	12,803	196,688	1.81
Worcester City Hospital			97,475	1.62
St. Louis City Hospital	1,000	17,284	256,830	1.13
St. Paul City Hospital	715	5,765	162,156	1.07
San Francisco City Hospital	700	3,788	110,555	1.07
N. O. Charity Hospital	1,074	16,742	327,632	0.86

The table speaks for itself, and even if the present administration costs 40 per cent. more than it did five years ago, the comparison with other institutions would argue that the administration deserves commendation, for no one who is intimate with former and present hospital conditions can question the improved efficiency.

The New Orleans Charity Hospital has deserved public sympathy and public support and the occasional donation or bequest

to the Hospital has been well earned. But it is almost mandatory that a larger endowment should be forthcoming, or, better still, that the State Legislature should recognize the great importance of this institution with a view to an adequate provision for its maintenance.

TO-MORROW'S TOPICS.

Doubleday, Page & Co. have recently published a series of three books under the above title, written by Robert T. Morris, M. D., of New York, best known to the profession as a distinguished surgeon of rather original ideas. The set is termed "To-Morrow's Topics" evidently because most of the questions touched upon will be better understood "to-morrow,' and it deals largely with the medicine of to-morrow.

Taking one up at random, we have read the one entitled "Doctors Versus Folks," although we noticed too late it was the last of the three. This certainly has not marred the pleasure of the reading nor diminished our anticipation of the enjoyment to be derived from the two others.

A book that it must have been a pleasure to write, it will be a delight to every reader who can appreciate a pot-pourri of philosophy, science, and wit.

Beginning in a reminiscent vein, the doctor indulges in a good deal of retrospection, though admitting that this is said to be the first sign of hardening of the arteries, meanwhile imparting much information which should be very useful to the beginner and very comforting to his elder.

The author relates many anecdotes, especially of surgical cases, which are either instructive or amusing and always interesting. He does not forget to include instances of errors committed by him and frequently imparts valuable lessons by means of his stories. By the way, in speaking of the size and adequacy of fees, he quotes the case of Danna versus Williams and argues it more from the Danna viewpoint.

Much space is devoted to the question of fee splitting and his arguments against the practice should be convincing to anyone not already convinced, be he doctor or layman.

The narrative is frequently lighted up with choice specimnes of wit and humor. As a specimen of the former: "Gratitude

commonly belongs chemically among the lighter hydrocarbons and follows their laws of diffusion;" of the latter: "It is well for every man to stop once in a while to think of what sort of a collection of mourners he has in training for the final event anyway."

As it is a characteristic of most humans to admire the views of those who agree with them, we must express our appreciation of the well-balanced ideas Dr. Morris enunciates regarding specialties and specialists. He considers that specialists who have not first done general work lose a great deal besides true professional spirit and concludes that the work of specialists will extend one into the field of another until we complete a circuit "to-morrow" and arrive again at the general practitioner. He can be sarcastic, too, on this subject, as when he says: "When the gynecologist amputates a breast, that sort of case does not belong to him; it belongs to the ophthalmologist, because the patient shed tears over her trouble." What would he not say of the selfsame gynecologist who removes—prostates!

Delicious epigrams abound in this book of entertaining instruction to the layman and instructive entertainment to the doctor. We had marked many, for quotation or reference, as we read; so many, in fact, that it is impossible to give any adequate idea of them; this could be gained only by a careful perusal of the whole book, which we advise all of our readers to treat themselves to. Simply to give you a taste for them all, we shall close with a short one and a long one. "There is no royal road to diagnosis.". . ."Changes are taking place with such bewildering rapidity that the doctor is out-of-date on a subject shortly after he has brought himself up-to-date."

THE PUBLIC DRINKING FOUNTAIN.

The last word in sanitary drinking fountains has not been uttered. Even a casual observer of a public fountain must notice the varied methods pursued by the user of these commodities. The more ignorant persons imagine that the porcelain cup on the fountain must be encircled by the mouth in order to get the water; many put the lips to the porcelain to suck in the flow.

The annotation of the *Army and Navy Register* recently is, therefore, timely:

"If improperly constructed or improperly used, the bubbling drinking fountain may be a greater menace to health than the common drinking cup. The other day an inspector of the U. S. Public Health Service took a seat beside a bubbling drinking fountain in a railway station and watched the way in which it was used. Forty-seven different persons, of whom 11 were men, 22 were women and 14 were children, used the bubbling fountain. In almost every case the lips were placed almost completely around the metal ball from which the water spurted, and one small boy seemed as if he were trying to swallow it. Several of the men obviously were chewing tobacco. Of the 47 people, 4 were colored, 3 looked as though they might have tuberculosis, and 3 had an eruption upon the face."

The drinking cup was bad enough, but the bubbling fountain looks worse.

THE TREATMENT OF CANCER.

The agitation of the cancer question among the laity has already done much good. The average person now looks suspiciously upon any growth or any unusual symptom suggestive of malignancy. Honest physicians and surgeons are better able to give advice, and in time, good results may be expected in the prevention of cancer.

The natural outcome of a general agitation of so important a question, however, has been the cropping up of a large variety of unbaked cancer cures, and even reputable medical journals have given place to articles on grotesque treatments which might have passed in the days of poly-pharmacy, but nowadays they look queer.

Honest investigation of cancer goes on and the cure of early cases needs no adventurous procedures; well-established technic in topical and surgical routine already suffices.

Medical News Items

The American Public Health Association elected the following officers at its annual meeting in Rochester, N. Y.: President, Dr. John F. Anderson, U. S. P. H. S., director of the Hygienic Laboratory, Washington; first vice-president, Dr. Geo. W. Goler, health officer, Rochester, N. Y.; second vice-president, Dr. Charles J. Hastings, medical health officer, Toronto, Ont.; third vice-president, Dr. Omar Gillette, Colorado Springs, Col.; treas-

urer, Dr. Lee K. Frankel, Metropolitan Life Insurance Company; secretary, Prof. Selskar M. Gunn, Boston; honorary members, General W. C. Gorgas, surgeon U. S. Army, Washington, D. C.; Dr. Stephen Smith, State Board of Charities, New York; Dr. Frederick Montizambert, director general of public health, Dominion of Canada, Ottawa, and Dr. Henry D. Holton, Brattleboro, Vt.

The New Mexico State Medical Association, at its meeting in Las Vegas the second week in September, elected the following officers: President, Dr. Evelyn Frisby, Albuquerque; vice-presidents, Drs. C. S. Lorey, Las Vegas; J. W. Kinsinger, Roswell, and A. H. Delong, Gallup; secretary, Dr. I. E. McBride, Las Cruces; treasurer, Dr. F. E. Tult, Albuquerque. The next annual meeting will be held in Albuquerque.

The Medical Association of the Southwest held its tenth annual meeting in Oklahoma City, Oklahoma, October 12-13. An unusually interesting program was furnished and the clinics held for the benefit of the members of the association were much appreciated. The attendance at the meeting was large.

The South Texas District Medical Association held its thirty-eighth semi-annual meeting in Nacogdoches, Texas, October 7 and 8, 1915.

The American Medical Editors' Association held its annual meeting at the Hotel McAlpin, New York City, on October 18 and 19, under the presidency of Dr. H. Edwin Lewis.

The Mississippi Valley Medical Association held its forty-ninth annual meeting at the Phoenix Hotel, Lexington, Ky., on October 19-21, under the presidency of Dr. Hugh Cabot, Boston.

Prevention of Infant Mortality.—The American Association for the Study and Prevention of Infant Mortality will hold its sixth annual meeting in Philadelphia, November 10-12. The following are among the subjects to be discussed: Eugenics; Effect of the Economic Standing of the Family on Infant Mortality; Infant Welfare Nursing in Small Cities, Towns, and Rural Districts; Institutional Mortality; Midwifery Conditions, and Treatment and Prevention of Respiratory Diseases.

Relief Fund for the Belgian Profession.—The report of the treasurer, Dr. F. F. Simpson, of the committee of the Ameri-

can physicians for the aid of the Belgian profession, shows, for the week ending October 9. 1915, a total disbursement of $7,-310.04, and a balance on hand of $556.80. The total receipts are $7,779.84.

Error Corrected.—In the September issue of the Journal, the following statement was made: Dr. Adolph Jacobs and Dr. W. F. Scott, respectively chief house surgeon and assistant at the Charity Hospital, ended their terms during the past month. Dr. Jacobs is succeeded by Dr. B. F. Gallant, of Kankakee, Ill., formerly superintendent of the State Insane Asylum. Both Drs. Jacobs and Scott are graduates of Tulane University and will practice their profession in New Orleans. This was incorrect, as Drs. Scott and Jacobs were house officers at the hospital, of equal rank. They were succeeded by Drs. David Adiger and Bert Tillery, two graduates at Tulane, 1913. Dr. Gallant was an assistant physician at the Kankakee State Hospital, and his present position at the Charity Hospital is as first assistant superintendent.

Examination U. S. Public Health Service.—Examinations for Assistant Surgeon, U. S. Public Health Service, will be held on November 1. Applicants should address the Surgeon General at Washington, D. C.

Chaulmoogra Oil Cures Leprosy.—According to newspaper report, 23 lepers have been discharged cured from the Culion colony, Philippines, after treatment with chaulmoogra oil.

J. A. Majors Company Opens Branch Office in Dallas.—The J. A. Majors Company, New Orleans, Southwestern representative of W. B. Saunders Company, has opened an office and storeroom in Dallas. The office is located at 405-6 Juanita Building, Dallas. The branch will have a full stock of medical books and journals.

New Faces for Soldiers.—Miss Ethel B. Davis, head nurse of Bryn Mawr Hospital, Philadelphia, returned to this country recently from the American Hospital in Paris filled with enthusiasm over the facial surgery now being practiced by Dr. Blake and his assistant. Miss Davis says, "Soldiers come into the hospital with the lower part of their faces shot away. A part of one of their ribs is taken and a new jaw fashioned out of it. A few

weeks later they leave with nothing to show but a slight scar on the face."

Warning Against Plague.—A warning against bubonic plague was issued on September 15 by the United States Public Health Service to port officials. Because of the fact that many countries both in South America and Europe are infected, it was urged that it will be necessary to exercise unusual precautions against the introduction of plague during the coming year. Quarantine officials in southern ports were particularly warned to watch arrivals from South America.

Keen Fellowship.—The Corinna Borden Keen Research Fellowship in Jefferson Medical College, the income of which amounts to $1,000, has been established by Dr. William W. Keen, Philadelphia. The recipient of the fellowship must spend at least one year in Europe, or wherever he can obtain the best facilities for research in the line of work he shall select after consultation with the faculty, after which he must publish at least one paper embodying the results of his work. For further information, address Dr. Ross V. Peterson, Sub-Dean, Jefferson College, Philadelphia.

Elizabeth Steel Magee Hospital Dedicated.—On October 27, the Elizabeth Steel Magee Hospital, of Pittsburg, Pennsylvania, was formally opened, appropriate exercises marking the occasion. The conferring of honorary degrees by the University of Pittsburg was a feature of the dedication.

The Southern Medical Association will hold its annual meeting in Dallas, Texas, November 8-11.

Free Lectures on Skin Diseases.—Dr. L. Duncan Bulkley and the attending staff will give a seventeenth series of clinical lectures on diseases of the skin in the out-patient hall of the New York Skin and Cancer Hospital on Wednesday afternoons, beginning November 3, 1915, at 4:15 o'clock. The lectures will be free to the medical profession on the presentation of their professional cards.

Hospital for Omaha College of Medicine.—The board of regents of the University of Nebraska have recently completed plans for a new hospital in connection with the College of Medicine at Omaha. The building is to be five stories in height and will consist of six wards of sixteen beds each, three receiving

rooms, six groups of isolation rooms of three beds each, and an operating room, operating amphitheatre and rooms for administration and service.

No Typhus in Serbian Hospitals.—The American Minister at Bucharest, Roumania, reports, in a cablegram dated July 26, to the American Red Cross, that during his inspection of the country he visited 75 per cent of all the Serbian hospitals and found no new cases of typhoid. The physicians say that although the malady seems to be entirely checked, it may appear again.

Fake Tuberculosis Cures.—In an address before the Federation of Labor, Dr. Charles Luck made the statement that $20,000,000 had been spent last year for "fake" tuberculosis cures, all of which were injurious to the system.

Registering Washerwomen.—Dr. S. B. Fishburne, the city health superintendent of Columbia, S. C., recently issued an order for washerwomen to hand in a statement of their names and patrons. This plan has been tried with great effect in Greenville S. C., and other cities are expected to follow in line.

Tobacco Causes Cancer of the Mouth.—After studying 100 victims of mouth cancer, only ten of which were women, Dr. Robert Abbe, senior surgeon of St. Luke's Hospital, New York City, presents a scathing arraignment of tobacco, when it is smoked or chewed in excessive quantities. Of the ninety men with mouth cancer, all but one were inveterate smokers. Most of them smoked cigars, to the number of three to twenty a day. Five smoked only cigarettes; one consumed fifty a day. Many used a pipe, which often caused cancer to begin where the end of the pipe stem allowed the hot smoke to come upon the tongue. Thirteen had cancer inside the cheek and all of these chewed. About one-tenth of the patients plainly owed their affliction either to a rough tooth, or to hot burning drinks, or both. The other nine-tenths of the cases are chargeable to tobacco.

To Prevent Tuberculosis.—The National Association for the study and Prevention of Tuberculosis formed plans at its recent convention for a "tuberculosis week," December 6-12, 1915. The society will try to have everyone, sick or well, visit a physician on December 8. Stores, factories and offices will be asked to have employes examined. On December 10, school chil-

dren all over the country will be instructed in healthful living. Clubs, fraternities and societies will be asked to give at least one day during the week to aid the campaign. It is also hoped to have tuberculosis discussed in more than 125,000 churches on "Tuberculosis Sunday," December 12.

Honor to Dr. S. Weir Mitchell.—Mr. and Mrs. Walter D. Ladd have presented to the Jesup Memorial Library in Bar Harbor a bronze bust of the late Dr. S. Weir Mitchell.

War and Medical Women.—A statement to the effect that "the war constitutes the turning point in the position of medical women, for whom there are new openings and new opportunities in these directions," was recently signed by Premier Asquith, Earl Curzon and Arthur J. Balfour, and calls attention to the London School of Medicine for women, which is now doubling its plant to cope with the war-time increase in the demand for women doctors.

American Medicine Gold Medal Award.—Dr. Rupert Blue, Surgeon General, U. S. Public Health Service, has been awarded the medal for 1915 by the trustees of the American Gold Medal Award. Dr. Blue has received this honor as the American physician who, in the opinion of the trustees, has performed the most conspicuous and noteworthy service in the domain of medicine and surgery during the past year.

Plague Case in California.—The first death from bubonic plague since October, 1913, recently occurred in Contra Costa County, California. The man is said to have contracted the disease from ground squirrels, many of which are known to be infected with the disease.

Sanitarium Opens for Treatment of Pellagra.—Fort Worth, Texas, has recently established the Southern Medical Sanitarium for the treatment of pellagra and nervous diseases. The sanitarium occupies the site of what was formerly known as Arlington Heights Female College, which building has been remodeled and made modern in equipment. A full staff of physicians and nurses are in attendance.

Dr. Osler Thanks American Friends.—Mr. Charles H. Grasty, formerly of the *Baltimore Sun,* recently received the following cablegram from Sir William Osler, regius professor of medicine, Oxford University, England: "Thank American

friends for all their kind help, moral and material, and tell them not to be discouraged. It is a long and terrible struggle, but democracy will win. England was never so full of the spirit of Washington and Lincoln as she is to-day." According to Mr. Grasty, Dr. Osler is in close touch with the real war situation and is very active in the war management on the surgical and medical side, and American generosity has enabled Dr. Osler to carry out very extensive and far-reaching plans.

Eugenics and Great Men.—In an editorial entitled "Great Men Are Biological Surprises," the *Southern Practitioner* quotes from the *Pacific Medical Journal*: "Some of the most efficient individuals have been born in ill health and with bad bodies. Emanuel Kant, the great philosopher and teacher of modern intellect, was so delicate a boy that his life was despaired of; Herbert Spencer was so feeble that he was not given a regular education, but no Englishman has a more marked influence upon his generation; Pope had Pott's disease of the spine and could not stand erect without his leather jacket; Sir Isaac Newton was in his childhood so small and frail that he was thought not worth while keeping alive. Genius means hard work, close observation, patient application and indefatigable perseverance. Eugenics could never prognosticate a Martin Luther, a Napoleon nor an Abraham Lincoln. What eugenics could produce a Beethoven, a Mozart or a Wagner? What combination of Adonis and Venus will give us a Shakespeare, a Gœthe, a Michæl Angelo, a Raphæl, a Luther Burbank or an Edison?"

Personals.—Dr. G. L. Clements, of Joplin, Mo., purchased last month ten acres of fine Louisiana orange land on the lake front from the New Orleans Lake Shore Land Company.

Dr. and Mrs. John Williamson Caldwell, of New Orleans, celebrated the fiftieth anniversary of their wedding on September 20. Dr. Caldwell was at one time a professor in Tulane University of Louisiana, and also a practicing physician of New Orleans.

Prof. Ernst Fuchs has retired from the chair of ophthalmology at the University of Vienna and also from the leadership of the first university ophthalmologic clinic, after thirty years of service at Vienna. Prof. S. Bernheimer, of the University of Innsbruck, will succeed Dr. Fuchs.

It is reported that Dr. Joseph A. Blake, formerly of New York

City, and one of the founders and chief surgeon of the American Ambulance, Paris, has withdrawn from the staff of the institution to enter the British hospital service.

Dr. Richard Pearson Strong has resumed his position as professor of tropical medicine in Harvard Medical School. Dr. Strong has returned to this country from Serbia.

Dr. R. H. Creel, U. S. P. H. S., has returned from his vacation and will continue the rat-proofing work in New Orleans under Federal authority.

Among the doctors who have returned from their vacations and resumed practice are: Drs. John T. Leake, Paul L. Reiss E. F. Bacon, Edward B. Ducasse, J. A. Gorman, John B. Elliott, Jr., T. M. Terry, W. D. Phillips and Isadore Dyer.

Dr. W. B. Collins, health officer of the State of Texas, spent a few days in New Orleans last month.

Removals.—Dr. G. C. Kilpatrick, from Pensacola to Van Antwerp Building, Mobile, Alabama.

Drs. DeRoaldes and Lynch, from 624 Gravier Street to 634 Maison Blanche Building, city.

Dr. Arthur Caire, from 702 Audubon Building to 511 Medical Building, city.

Dr. W. M. Weatherall, from Garnett to Star City, Ark.

Dr. Lucien A. Fortier, from 4901 Camp to 5008 Magazine Street, city.

Dr. Robert Bernhard, from 604 Macheca to 711 Macheca Building.

Dr. S. W. Stafford, from 604 Macheca Building to 711 Macheca Building.

Dr. J. E. Brierre, from Cusachs Building to 830 Audubon Building.

Dr. F. Temple Brown, from Cusachs Building to 810 Maison Blanche.

Dr. W. P. Bradburn, from Cusachs Building to 741 Carondelet.

Dr. N. F. Thiberge, from 604 Macheca Building to 846 Audubon Building.

Dr. J. W. Simmons, from Eye, Ear, Nose and Throat Hospital, New Orleans, to Abilene, Texas.

The *Medical Herald,* from 1013 Gloyd Building to 613 Lathrop Building, Kansas City, Missouri.

MARRIED.—On October 5, 1915, Dr. Amos Hall Fortner to Miss Martha Bryant, of Whitewright, Texas.

DIED.—On September 20, 1915, Dr. B. A. Colomb, of Colomb Park, La., aged 53 years. Dr. Colomb was a graduate of Tulane University in the early eighties.

Book Reviews and Notices

Text Book of Surgical Operations, by Fedor Krause and Emil Heymann, Translated into English and Edited for American Readers by Albert Ehrenfield. In Six Volumes. Vol. I. Rebman Company. New York.

This book will, we believe, be well received in this country. Only the first volume is before us, giving general surgical technique and a discussion of the treatment of wounds and affections of head and face, the extirpation of tumors of the face, plastic operations on face, surgery of eye, ear and nose, surgery of trifacial nerve and extirpation of Gasserian ganglion. The text is clear and the illustrations excellent.

We think it an admirable work, but believe that the translator made a mistake in changing the text so as to make it conform to American practice. It would have been much better to state the German view and give in notes any suggestions intended to indicate the American practice. In other words, he has naturalized the German book without leaving the hyphen.

The work, however, as it stands, is to be highly commended.

F. W. PARHAM.

Collected Papers of the Mayo Clinic, Rochester, 1913. W. B. Saunders Company, Philadelphia and London.

It would be difficult and useless to attempt to review in anything like an adequate manner the rich store of contribution to surgery to be found in this volume. It illustrates well the progress of surgery during the past year on many topics. It fitly represents the work of this great clearing house of surgery and ought to be in the hands of every surgeon who wishes to keep abreast of the times in surgery.

PARHAM.

Outlines of Internal Medicine. For the use of Nurses. By Clifford Bailey Farr, A. M., M. D. Lea & Febiger, Philadelphia and New York.

The scope of this excellent hand-book is comprehensive and the information it furnishes is accurate and modern. The chief criticism that might be leveled against it is that the author in attempting to cover the whole field of internal medicine necessarily has at times to be so brief as to be inadequate unless the reader has already some idea of the subject being discussed. On the whole, however, the book will fulfill its purpose, namely, to supply the basis for a course of systematic lectures to nurses and in addition to serve as a work of reference to which the nurse may turn for information concerning the rarer cases which may come under her observation. It may be heartily recommended to the graduate as well as to the undergraduate nurse.

I. I. LEMANN.

Diarrheal, Inflammatory, Obstructive and Parasitic Disease of the Gastro-Intestinal Tract. By Samuel G. Gant, M. D. LL. D. W. B. Saunders Company, Philadelphia and London, 1915.

The author has given us a thorough and scientific description of the diarrheal diseases, as well as an eminently satisfactory work from the practical therapeutic standpoint. The appearance of this monograph is timely for it will serve to stress the fact that diarrhea is merely a symptom, not a disease, and that its cause must be worked out before any efficient treatment can be instituted. The practitioner will find this book a welcome addition to his working library, for it covers its subject in a more detailed and complete fashion than is possible in the text books and systems of general medicine.

LEMANN.

Surgery of the Blood Vessels, by J. Shelton Horsley, M. D., F. A. C. S. C. V. Mosby Co. St. Louis, Mo., 1915.

This readable book, written by one of the ablest workers in this country along the lines indicated by the title, covers its subject fully, yet without the introduction of unnecessary matter. Beginning with the histology of the blood vessels, it gives in succession the indications of blood vessel suturing, its history, its technique and its application to various conditions, including transfusion, lateral anastomosis, aneurism, varices, etc. It is of particular interest as giving the technique of the author for bloodvessel suturing, based on much experimental work in his laboratory. Both students and active practitioners will find much profit in reading this book, containing as it does the methods in use by Shelton Horsley in the practise of a new and developing branch of surgery.

H. B. GESSNER.

The Principles of Bacteriology. By A. C. Abbott, M. D. Ninth revised edition. Lea and Febiger. Philadelphia and New York.

The many good features of former editions have all been retained and the book has been brought up to date. The very fact that the

ninth edition has been called for emphasizes the popularity and usefulness of this book intended specially for the beginner.

C. C. BASS.

Essentials of Laboratory Diagnosis. By F. A. Faught, M. D. Fifth revised edition. F. A. Davis Company. Philadelphia and London, 1915.

In this complete revision of this most popular and useful laboratory manual the author has eliminated largely the discussion of clinical pathology. The material has been more or less rearranged in order to avoid parallelism between methods. BASS.

Alveodental Pyorrhea, by Charles C. Bass, M. D., and Foster M. Johns, M. D. W. B. Saunders & Co. Philadelphia and London, 1915.

The work of Bass and Johns with Riggs' Disease has already attracted large attention and it is certainly timely that they should have put their findings in book form for general accessibility. Not only the physician and dentist, but the layman as well, may read this book with profit.

It is certainly revolutionary, in that it attacks misconceptions and disabuses many of us of what were formerly convictions regarding bad teeth. That the teeth form a vast group of morbid activities must be proven, but the authors carry conviction on one point, viz., that the *Ameba buccalis* is a party highly criminal in Riggs' disease and the cure of Riggs' Disease is dependent upon the destruction of this organism. The frank confession of the authors that the Endameba is not known to cause Riggs' disease disarms all attack from those dentists who ride their own hobbies in theories of the etiology of this affection. The authors say:

> "We do not know of any conclusive evidence that the endamebæ do or do not directly damage or break down tissue. It is quite possible that they could not produce pyorrhea unaided by their symbiotic bacteria and spirochetes, any more than the bacteria and spirochetes can produce the disease unaided by the endameba. There are many instances of such obligatory symbiosis in nature."

The review of the whole subject of pyorrhea is comprehensive and the evolution of the findings of the *Endameba buccalis* as a causative factor is detailed. Plain explanation is given for the deductions and complementary advice follows, covering the care of the teeth and the use of ipecac in the treatment. The authors emphasize the importance of dental surgery in connection with the specific use of emetin and ipecac and throughout an appeal is made to the intelligence of the reader in undertaking an essential prophylaxis.

The book is well presented and must serve a large educational purpose; the illustrations, however, most appeal to all who see the book, not only for their judicious selection, but because the greatest part of them are original and have been made in the laboratories of Experimental Medicine, at Tulane University, and they are evidences of the personal endeavor of the authors of the book.

The scientific value of this book of Bass and Johns must be determined by the final results—but the authors and the publishers have together presented a book which is a credit to them in its makeup and in its material service to all concerned.

DYER.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, etc. Edited by Hobart Amory Hare, M. D., assisted by Leighton F. Appleman, M. D. Volume XVII, No. 2, 1915. Lea & Febiger. Philadelphia and New York.

Quite an array of material is offered in this volume, contributed by Coley, Gerster, John G. Clark, Stengel and Edward Jackson. The subjects fill a large scope and as usual are comprehensive and valuable. While most of this volume is made up of recent surgical topics, we must emphasize the value of Stengel's chapter on Diseases of the Blood, etc., covering, as it does, a review of modern ideas on the subject and including an excellent discussion of some of the ductless glands. This publication needs to be read to be appreciated and it has no superior in its place as a review of current medicine and surgery.

DYER.

Selected Addresses. By James Tyson, M. D., LL.D. P. Blakiston's Son & Co. Philadelphia.

The foreword of Dr. Tyson's book is a sufficient "raison d'etre" for its publication:

> "Dedicated to the numerous physicians who from time to time have patiently sat under my instruction during a long career as a teacher of medicine."

For what is more gratifying to the followers of a loved teacher than the opportunity of sitting in the quiet of after years and reviewing some of the personal views of that teacher? The classroom and the hospital may give the students glimpses of his teacher, but the written page of memoirs brings out the heart touch which makes the memory stronger and better. Even we who were not privileged to "sit under" Doctor Tyson find much of interest and of profit in these addresses—and it really needs a few "Tysons" to add to contemporaneous commentary in medicine to make future medical history for America.

DYER.

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The Medical Clinics of Chicago. Volume 1, No. 2. September, 1915.

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AMERICAN MEDICAL ASSOCIATION PRESS. Chicago, 1915.

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Dementia Precox Studies; Removing Visible Restraint from the Harmless Insane, by Will H. Solle. **The Adrenal Mydriasis of Dementia Precox,** by Bayard Holmes, M. D.

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The Hemlock Spruce, by Oliver A. Farwell.

Medical Education and Municipal Hospitals, by August Schachner, M. D.

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The Bacterial Flora of Trees and Men, by Stephen J. Maher, M. D.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans for September, 1915.

Cause.	White	Colored	Total
Typhoid Fever	4	2	6
Intermittent Fever (Malarial Cachexia)	2	1	3
Smallpox	.....	.....	....
Measles	1	.....	1
Scarlet Fever	.....	.....	....
Whooping Cough	.....	.....	....
Diphtheria and Croup	12	5	17
Influenza	.....	.....	....
Cholera Nostras	.....	.....	....
Pyemia and Septicemia	.....	.....	....
Tuberculosis	31	36	67
Syphilis	1	.....	1
Cancer	17	10	27
Rheumatism and Gout	.....	.....	....
Diabetes	5	1	6
Alcoholism	.....	.....	....
Encephalitis and Meningitis	.....	.....	....
Locomotor Ataxia	1	.....	1
Congestion, Hemorrhage and Softening of Brain	19	17	36
Paralysis	3	1	4
Convulsions of Infancy	1	.....	1
Other Diseases of Infancy	10	7	17
Tetanus	2	2	4
Other Nervous Diseases	4	.....	4
Heart Diseases	42	38	80
Bronchitis	4	2	6
Pneumonia and Broncho-Pneumonia	11	18	29
Other Respiratory Diseases	1	1	2
Ulcer of Stomach	.....	1	1
Other Diseases of the Stomach	.....	1	1
Diarrhea, Dysentery and Enteritis	33	16	49
Hernia, Intestinal Obstruction	4	2	6
Cirrhosis of Liver	8	1	9
Other Diseases of the Liver	1	1	2
Simple Peritonitis	.....	1	1
Appendicitis	5	2	7
Bright's Disease	22	9	31
Other Genito-Urinary Diseases	10	7	17
Puerperal Diseases	5	.....	5
Senile Debility	1	.....	1
Suicide	4	.....	4
Injuries	29	22	51
All Other Causes	23	22	45
Total	316	226	542

Still-born Children—White, 30; colored, 37. Total, 67.

Population of City (estimated)—White, 272,000; colored, 101,000. Total, 373,000.

Death Rate per 1000 per Annum for Month—White, 13.94; colored, 26.85. Total, 17.44. Non-residents excluded, 15.57.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure 29.94
Mean temperature ..... 81.
Total precipitation ..... 10.83 inches
Prevailing direction of wind, southeast.

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Original Articles

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. A complimentary edition of one hundred reprints of his article will be furnished each contributor should he so desire. Covers for same, or any number of reprints, may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

DISEASES OF INDIANS OF THE SOUTHWEST AND THEIR TREATMENT.

By R. I. GEARE,

The statements presented in this article are largely obtained from Bulletin 34 of the Bureau of American Ethnology, which is a summary of the results of extended research among a number of Indian tribes of the Southwest made by Dr. Ales. Hrdicka, Curator of Physical Anthropology in the National Museum. They will, it is hoped, afford at least a glance at the numerous conceptions and practices of those Indians.

The Southern Utes suffer from various digestive and pulmonary disorders, including consumption, while among the Apaches in Arizona and New Mexico the disease probably of greatest prominence is pulmonary consumption. Epilepsy and insanity are also occasionally encountered. On one reservation among a population of about 3,000, there occurred from 1901 to 1903, 255 deaths, of which over 36 per cent were due to different forms of tuberculosis. The conditions are still worse among the Mescaleros.

On the White Mountain reservation such cases are less common, but again become more frequent among the Jicarillas, and with this tribe several deaf and dumb children were observed. Both adults and young people of the Walapai tribe suffer from stomach and intestinal disorders.

The Navaho Indians are as a rule healthy, except perhaps those around Fort Defiance, and their common disorders are those affecting the digestive tract. Within recent years they have learned to make an inferior kind of bread in which they use much cheap baking powder, and as the bread is not baked well, and is eaten in large quantities, indigestion necessarily results. The increasing use of large quantities of black coffee also has a bad effect in producing headaches and vertigo. Rheumatic pains, particularly in the lumbar region, are quite common among old people, as well as simple ophthalmia and irritation of the eyes.

Among the Hopi Indians the most common diseases are ophthalmia and gastro-intestinal disorders, the former being generally caused by wind-blown sand. As a result, a comparatively large number of them become more or less blind. Among the Hopi children were noticed several cases of fevers, 3 of chicken pox, 3 of dry eczema, 2 of scrofula, one of strabismus, numerous instances of conjunctivitis and some of cough.

The most prevalent and fatal diseases among the Zuni are those of the intestinal tract—enteritis of different forms but not typhoid—pneumonia, tuberculosis (particularly pulmonary), and various infections.

The Papago Indians seem to be healthier than some of the other Southwestern Indians, while among the Pima tribe tuberculosis in its different forms, including scrofula, is quite frequent. One case apparently of elephantiasis of the foot and one case of marasmus were also observed among the Pimas. They say that if a stalk of the bush "Cul-ick-un-ek" (*Dondia suffrutescens*) wounds a man and is not promptly removed, it is liable to cause blood-poisoning that may have fatal results. Contact with the plant "ha-van-tatat" ("crows' feet": *Phacelia,* probably *infundibuliformis*) is followed by inflammation of the skin, and the Pima Indians say that when this plant touches the naked arms or legs it produces sores which, though they do not spread, will last for 3 weeks to a month.

With the Mohave Indians the most common complaints were found to be those of the stomach and intestines, and muscular rheumatism.

The most prevalent diseases among the Yamas seem to be malaria and venereal troubles, while among the Opatas those of the digestive system are the most common. Malarial fever is also prevalent.

The Yaquis are very sturdy, though along the valleys, especially in the midsummer rainy season, they suffer from fevers probably of a malarial nature.

A certain amount of irregularity of living and unhealthiness of the lowlands, with too frequent use of "tesvino," subjects the Tarahumare Indians to numerous disorders, the commonest of which are affections of the digestive organs and various forms of malaria. An affliction much spoken of and often fatal is "dolores costales," a term probably including both pleurisy and pneumonia. Contagious diseases, such as variola, visit these Indians occasionally. While insanity is very rare, cases of temporary mental aberration following drink are well known. Deaf and dumb people occur in this tribe and blindness is more or less frequent as the result of smallpox or injury of some kind.

Malarial fevers, dysentery, and a chest disease probably pneumonia, seem to be most frequent causes of death among the Tepecano Indians in Jalisco.

The Cora Indians seem to suffer chiefly from calentura and outbreaks of smallpox. Pulmonary tuberculosis occurs, though rarely, and intestinal disorders among the infants are common.

Results from the abuse of intoxicants are said to mark the Otomi Indians, while epilepsy and other neuropathic conditions are met with quite frequently.

The most common diseases among the Tlahuiltecs, besides the effects of alcoholism, are various calenturas and pneumonia.

From the preceding remarks the following are a few of the general deductions made as to the health and diseases of Indians in the Southwest and Northern Mexico: On the whole the health of the Southwestern and North Mexican non-civilized Indians is superior to that of the white living in larger communities. Pathological conditions of the blood are very rare, while anemia is occasionally met with in the latter stages of malaria, or, in a

lighter degree, in some of the taller schoolgirls, who have become debilitated. Diseases of the respiratory apparatus are relatively common and cause numerous deaths. Disorders of the digestive apparatus are very common, but rarely serious except in the case of infants. Typhoid is very rare. Certain forms of diarrhea or dysentery attack both adult and young Indians, especially in the low-lying parts of Mexico. Intestinal parasites occur very seldom. Venereal diseases prevail more or less in the tribes near railroad centers and near large white settlements. Diseases of the skin are restricted to eczema, favus, or ulcers in children, acne in adolescents or young adults, and some ulcers, due to neglect, in older individuals. Headache is quite common among the nervous and mental disorders, while vertigo occurs only occasionally, and hysteria of light or moderate form is met with occasionally in growing girls. Diseases and defects of the sense organs include numerous ophthalmias, some trachoma and occasionally a cataract. Strabismus is very rare, and so are ear diseases and defects of hearing. Of contagious and infectious diseases the most dangerous is smallpox. Localized epidemics of measles are quite common. Scarlet fever is very uncommon. Whooping cough is not very rare. Influenza was reported from several localities, and pneumonia in isolated cases has appeared in an epidemic form. Malignant diseases and hernia seem to be very rare, while rheumatic afflictions are quite common. Pathological obesity does not exist.

In studying the defects of pigmentation, Dr. Hrdlicka met with two apparently related classes of phenomena. One of them was a regular, more or less complete and extended congenital lack of the usual pigmentation, or what may be termed *albinism* proper; the other being a generally irregular, more or less incomplete and extended, depigmentation occurring at some period of life and known more commonly as "vitiligo." Both of these conditions, originally probably neuropathic, yet seemingly radically different, explains Dr. Hrdlicka, were met with among the Indians visited, but in the Southwestern States the cases found were comparatively few in number and were restricted to a few tribes, while no instance of either kind was encountered among the Mexican Indians excepting the Tarahumare.

Taking up the Indian conception of disease, its prevention and treatment, including folk medicine and medicine-men, Dr.

Hrdlicka remarks that among them illness is regarded as a deleterious spell which includes bodily suffering, is generally inimical to physical welfare and may even bring an untimely death. Ailments caused by certain natural conditions, such as extreme heat or cold, and accompanied by various symptoms, as pain, debility, fever, etc., are viewed rationally, but similar symptoms arising without their cause being observed cause suspicion of natural or supernatural secret agencies, and often the Indians suspect as the actual agent of a disease some material or magic object such as in his belief might cause the principal symptoms if introduced into the body in a natural way and with his knowledge. Thus there are in his mind "two chief classes of ailments, (1) those of an ordinary character which have their origin in extreme old age, accidents, or some other accountable manner, and (2) those of a mysterious nature, incited by some adverse natural or supernatural power, sustained often by magic or particularly by some material agent introduced secretly into the body and requiring special, largely thaumaturgic treatment." In brief, these people believe that all serious or protracted illness, the cause of which is not apparent, is due to occult influences of men, animate or inanimate objects, spirits or deities, and that the influence is exercised by a magic or secret introduction into the body, particularly during sleep or through touch while awake, of some noxious object as poison, a worm, an insect, a hair, a thorn, or a live coal, which produce and maintain the morbid manifestations. Death from disease, especially in the case of a young male adult, is regarded as the work of supernatural agencies superior in power to the counter-agencies employed as a cure.

As the result of the Indians' effort to find persons endowed with the supernatural powers to control and counteract the powers that caused the disease, there arose a class of "medicine-men" and "medicine-women" who were supposed to have extraordinary and mysterious powers, which they acquired prenatally or received in dreams or in connection with some notable event in their lives. By means of these gifts and with the aid of fetishes they are supposed to recognize the mystic causes, to choose the most efficacious way of preventing further action of this cause and to remove or neutralize the objective agent to whose presence the suffering is due.

The treatment accorded by the medicine-man may consist of

repeated prayers to the elements or deities, depositing prayer sticks or counter-charms in shrines. Appeals to the patient's personal protector or totem, the use of songs, rubbing or kneading, extracting the objective cause of the diease, blowing air or tobacco smoke on the patient, etc., etc. There are also medicine-women in several of the tribes, a few of whom practise in the same manner as the men, but most of them serve as midwives and herbalists. They are said not to be tricky, like the men, and usually apply simple remedies, such as herbs. Quite independently of supernatural cures there is among the Indians much simple general knowledge of actual remedies, the medicine usually taking form as a decoction of some plant, though they are also used as an infusion, being first prepared by chewing and then applied externally as a salve or poultice. In only a few tribes are several herbs mixed together in one medicine. Among other curative methods are sweating, bandaging, splints, scarification, cauterizing, rubbing or kneading, pressure, etc.

Numerous native remedies are employed by the Jicarillas, and particularly the White Mountain Apaches, who use extensively the sacred yellow pollen called "hadntin," which is obtained from a plant known as "the-the," "tule," or "to tara" (*Scirpus lacustris*). The woody part from the inside of the cactus, *Opuntia emorcyi,* tied on a string, is hung around the neck as a charm to ward off disease.

A good food for the sick is a mixture of the "cin-ko-ja" berries with water, while the roots of "i-zé i-gag-goh-é-hi" (*Euphorbia*) as well as the roots and sometimes the stems of *Clematis drumondii* are chewed raw and fresh to induce diarrhea and vomiting. A decoction from the latter is administered in prolonged cases of indigestion. Another root used as a laxative and to produce vomiting is the "snake medicine" ("Klish i-ze"), while still another used is the inside bark (pounded up and boiled) of a bush known as "ta-dla-tsin."

A liquor made by boiling the roots of "céh-ji" (a species of *Chrysothamnus*) is taken for pains in the chest, while the roots of the "Na-go-nel-thi" plant are used to cure colds and sore throats. The roots of "chil-to-je" (*Rumex hymenosepalus*) are taken in the form of a decoction for coughs and consumption. The tops and young twigs of "Tha-ha-ne-tsa-i" (*Ephedra viridis*) are boiled and sweetened for use by the San Carlos

Apaches as a cough medicine. The seeds and root-bark of "sas-chil" (*Canotia holocantha*) and the roots of "I-zé hl-chi" (*Eriogonum alatum*) are pounded up and boiled, and the decoction taken to cure diarrhea. Rheumatic pains are cured by the San Carlos Apaches by the use of the plant "chil-chek" (*Covillea tridentata*), which is common along the Gila river. The tops, heated over the fire, are applied as a sort of poultice. These Indians boil the root of "Kesh-tsuz i-ze" (slim-wood, *Fouquiera splendens*) and use the hot liquor as a bath for sore limbs. The root of this plant is also applied, pounded up, to any kind of swelling after the skin over the affected spot has been scarified with a piece of glass.

In cases of snake bites or scorpion stings the patients suck the wounds, spit toward the four cardinal points and pray that they may not be hurt!

A curious cure for sore eyes consists of letting the smoke obtained by burning the pith of *Opuntia bigelovii* on hot coals go into the open eyes. The cottony part of the root of "me-toi-da-il-too" (*Perezia wrightii*) is applied locally to sores and small wounds, and is also placed around the umbilical cord in the newborn infant and applied to any sore that may show itself there. The root "i-zé bi-né" (*Cereus gregii*), dried and powdered, is applied to open wounds and sores.

Among the Mescaleros faith in witchery is firm. One case of tuberculous meningitis was first treated by the agency physician, but as the disease did not give way, a nature medicine-man was called in. He first tried to remove the cause by sucking, and pretended to extract a gopher from the child's head. As this did not help and the child died, he declared that it had been bewitched. Cases of prolonged headache among these Indians are said to be cured by gathering a bunch of the aromatic twigs of "tsa i-zé" (or "I-tsa i-zé") (*Hedeoma reverchoni*), rubbing them in the hands and inhaling the smell.

One remedy for consumption is to drink the decoction made by pounding the "medicine red flower" plants, and another one is composed of two or three kinds of vegetal medicines mixed together. These are boiled and the patient drinks about a pint of the tea at one time. The same remedies are given for tapeworms, under the belief that it kills the worms.

In treating cases of rheumatism the Mescaleros rub on the affected parts a decoction of several roots and then subject the patient to a process of sweating. A large pan or tub, or a large hole in the ground, is half filled with water, into which are thrown some of the roots and heated stones. The receptacle is first covered with sticks and then with juniper balls, the patient sitting on the top wrapped with cloths up to the chin. There he remains for about half an hour. Afterwards some of the decoction is again applied locally. Before the treatment the joints are usually marked with red ocher ("chi"), a custom whose object and significance are unknown.

The broken twigs and leaves of a parasitic plant (*Phyllanthus*) are used by the Mescaleros as a remedy for itching. They boil the medicine and drink it or apply it externally.

The roots of "kuh-bi-zé" ("Snake medicine") are in great repute for snake bites among the Mescaleros. A piece of the root, preferably fresh, is chewed up and applied to the wound, being held in place by a rag. If applied early or even within a few hours, the part affected swells or pains very little, if at all. The bitten part should not be washed with water. If it is, much swelling results.

For curing toothache, after burning the end of a certain kind of twig, it is inserted as hot as possible into the cavity; or, when there is no cavity, the heated point is applied to the top of the tooth. This treatment is repeated till the aching stops. The leaves of the mesquite are used for sore eyes. The leaves are ground into powder, which is placed in a thin cloth, water is added, and the liquid then squeezed into the eyes. In aggravted cases, when a sort of membrane forms over the eyeball, the Mescaleros insert a needle under the "flesh" and, cutting the latter with a splint of glass, "pull it right off."

In curing their various bodily disorders the Navahos employ many herbs. Sweat baths are also frequently employed, but in the more serious cases, reliance is placed on the tribe's medicine-men, who treat them by means of fetishes, incantations and prayers.

Some of the Navaho Indians use the "white-man's medicine," "E-na i-ze" (*Chrysothamnus greenei*), in cases of measles and chicken pox. They break up the tops of the plant and place them in lukewarm water. After steeping the mixture, the whole

1. Peyote plant and button.
2. Wiki, a Hopi priest, chief of the Snake Society.

ILLUSTRATING DR. GEARE'S ARTICLE.

body of the patient is rubbed with it, afterwards being well covered up. The eruption is said to darken rapidly and dry up.

There is in the Field Museom of Natural History, in Chicago, an elaborate medicine outfit of a Navaho shaman. It consists of four painted buckskin masks, a bunch of large eagle feathers, 12 plume sticks, 3 bundles of mixed feathers, 16 bundles of turkey feathers, 2 fine old bull roarers, 2 rawhide rattles, a gourd rattle, a rawhide rattle, a bone whistle, a stick seven inches long wrapped with buckskin, a stick 5 inches long wrapped with woolen yarn, 4 miniature bows, 2 horn cups, a flanked quartzite implement, a clam shell, 2 chipped flint implements, 2 chipped jasper implements, 2 flat horn-tipped implements, a bundle of fire sticks, a necklace of hawk talons, a square piece of buckskin, a goatskin bag, 2 badger's feet, a small modern Hopi feed-bowl, a lot of dried juniper berries, a lot of dried and chopped up internal organs, a lot of friable sandstone, 2 lots of bone, a large blue glass marble, 8 lots of herbs and seeds, a lot of indigo, a lot of vegetable mold, a stemless clay pipe, 8 buckskin bags containing paints, earths, etc., 10 small lots of Indian corn, a cone of stalagmite, 2 quartz pebbles, a fossil oyster, 2 wristlets of eagle and hawk talons, 50 small buckskin bags, containing paints, earths, roots and herbs, vegetal powders, etc., etc., and a buckskin bag resembling the Apache "split bags."

Dr. Hrdlicka found that the Hopi Indians use numerous herbs and other objects as remedies, most of which seemed to be employed as fetishes, or from their having some fancied resemblance to the disease or diseased organ. At some of their ceremonies they drink or rub themselves with mixtures which are supposed to be "good medicine," preventive of all illness through their magical power. After the snake-dance, the participants drink "for purification" a decoction made of a number of herbs which soon acts as an emetic. The vomiting is supposed to clean the body spiritually as well as physically. Splinters from trees struck by lightning have a repotation among them for great efficacy, as fetishes, in the treatment of fractures. One of their peculiar treatments is to bandage tightly a sore limb with a rope, but the reason was not ascertained. For snakebites two antidotes are given, a secret decoction of a number of herbs, which is drunk, and the application to the wound of the ventral surface of the disemboweled snake.

The Papagos employ treatments about the same as other tribes, mostly by incantations, partly by herbs. Open wounds are always treated with powders, gum, or decoctions, which chiefly induce suppuration, and healing by granulation. Boiled red earth from beneath the fire, strained and with a little salt added, is used in acute indigestion. In chronic indigestion a dose of a decoction made from the white inner bark of the mesquite, powdered as finely as possible, and boiled, with salt added, is given to the patient early every morning. One child was noted with what looked like a plaster on each temple as a cure for headache. They were made from flour alone and were supposed to "stop the air from going in through the temples."

A decoction made from the boiled leaves of "greasewood" ("Sho-sho-go-i"), *Covillea tridentata*, is used as a remedy for contusions, and by the Pimas and Maricopas for stomach troubles, while the powdered root of the "Sé-wi-dje" (Canaigre), *Rumex hymenosepalus,* is put on sores, especially sore lips. The juice of the mesquite is a cure for sore eyes and sore eyelids.

The San Xavier Indians have a curious remedy for ear-ache. They boil an egg quite hard. A small hole is made at one end and covered with a rag, the egg being then applied to the sore ear.

Among the Papagoes the dried and powdered flesh of the rattlesnake is used in cases of consumption, a small quantity being added to the patient's food while it is cooking and without his knowledge. In fevers these Indians use the root of the "big children" plant ("A-a-li gu-gu-li"). The root is broken up into little pieces and boiled. This root is also used for tooth-ache, ground up fine, mixed with fat and then placed in the cavity. It is also used for neuralgia. In cases of snake-bite the snake is killed and torn open, and a part from the inside is applied to the wound.

It is commonly believed by the Pima Indians that patients suffer as the result of transgression or the breaking of some tabu. The medicine-man is usually called in to find the true cause and the patient often recollects that he did some wrong—as the medicine-man may indicate. It is said that hair, when surreptitiously introduced into the body, is one of the principal substances that may operate as a cause to produce or aggravate disease.

In the case of children's diseases, it is believed that the parents did not properly care for themselves during the period of gestation. For instance, they may have killed an animal, whose spirit causes the disease of the child. If it was a dog, the child will have fever; if a rattlesnake, there may be a swelling of the stomach in the child to be born; if a coyote, diarrhea; if a rat, chills.

Horned toads are not supposed to be killed by the Pima Indians: but if one is killed, the children may become "lame in the joints" or hunch-backed.

In the case of the death of an apparently healthy man or woman, the Pima Indians believe that a medicine-man has caused death through his magic, that the victim may have been called away by a dead person, or otherwise bewitched. They also believe that the badger can cause disease by making the neck swell, which is easily cured, however, by warming a badger's tail and tying it over the affected part.

An owl's feather is used in curing a person who steadily loses flesh and feels ill. The dark yellow pollen of a little fungus (*Tylostoma*), which the Pimas call "Che-wa-te mo-to-a-te," is applied by them about the cord of the newborn infant, both as a prevention of inflammation and as a remedy when inflammation or suppuration has developed.

For rattlesnake bites the Pimas suck the wounds, but the latest remedy is to kill the snake, tear it open and apply to the wound a certain fat which is found along its middle. It is said to be efficacious even when the limb has begun to swell, and occasionally is applied without sucking the wound. In all painful internal affections, cauterization is used, and for this purpose a small, cottony ball of parasitic origin is used.

The Maricopa Indians use several remedies similar to those employed by the Pimas, as the tribes have intermarried. They have, however, a number of native remedies, such as the powdered fruit of the Cat cactus mixed with a small quantity of ground wheat, for diarrhea; a tea made from boiled branches of "greasewood" for disorders of the stomach; the boiled dried blossoms of the "reed lay down" (X'tá-chách) for colds; the juice of a little plant known as Ku-rír, which is of a milky consistency, for constipation; the mesquite juice, dried and ground

fine, for sore eyes; crushed beans, mixed with water, of the castor-oil plant (Kwel) for ear-ache, etc., etc.

The basis of treatment of disease among the Mohaves is largely superstition and magic. Their medicine-men, who are very powerful, claim to stop almost any pain or cure almost any sickness by prayers or songs. If the patient has a fever, the medicine-man blows it away. It is said that one of their snake doctors can "kill" the rattlesnake poison in an instant without medicine or manipulation. Certain vegetal remedies, however, are used by this tribe, as well as physical means to alleviate sickness.

HOOKWORM WORK AT CUYAMEL.*

By NATHAN BARLOW, M. D., Cuyamel, Honduras.

A few weeks of medical work in Honduras are enough to convince any careful observer that the hookworm is responsible for the inefficiency of the native labor, more than all other causes combined.

The general methods of the Porto Rican Commission, International Health Commission, and United States Public Health Service, are beyond any doubt those best adapted to combating this disease. These methods require a force devoted entirely to this work, and are entirely out of reach of the busy corporation surgeons. In connection with the general work, all of the hospital cases can, of course, be examined in the usual manner. It is impossible to obtain specimens of feces from more than a small proportion of the men who are at work. It seems that the more ignorant the patient, the more disgust he feels at the idea of preserving a specimen.

In connection with the antimalarial work, it was found necessary to make a blood examination of every patient. At Cuyamel, the opinion of the medical force is that no one can practice anything worthy of the name of tropical medicine, who does not examine the blood of every patient presenting. A systematic study of the infection with the various animal parasites was undertaken, and a simultaneous examination of the blood of the same patients made, for the purpose of correlating the two findings, if possible. The results of these two studies are given in separate papers.

*Read before the Seventh Pan-American Medical Congress, San Francisco, Cal., June 19, 1915.

The following facts were elicited, with have a bearing on the main question:

Hookworm	is present	in	natives	79.25%,	negroes	54%
Trichuris	"	"	"	"	49 %	"	47%
Ascaris	"	"	"	"	44.5 %	"	40 %

Every native, or negro, free from malaria or other disease causing anemia, who has a percentage of hemoglobin of 60% or less, has hookworm. The only common diseases causing such anemia are malaria and protozoal dysentery.

Malaria will not cause a drop of hemoglobin to 60% within the first few days of illness, latent cases excepted.

The protozoal dysenteries may be eliminated, by sending all patients with a history of diarrhea or colic, or with painful or tender liver, to the hospital for examination. In Cuyamel, any symptom of indigestion may indicate a protozoal infection.

In severe ulcerative dysenteries, there is increased danger of absorption of thymol, and in one instance the unpleasant symptoms were prolonged. Since then, we have postponed the administration in such cases. In mild cases, the treatment may, with advantage, be given during the course of the emetin injections.

Other diseases, as tuberculosis, cancer, leukemia, syphilis, etc., are comparatively rare in Honduras and will very rarely produce an anemia of 60% or less, except in those cases readily recognized by clinical symptoms or blood examination.

The percentage of eosinophiles is valueless, except as a general indication of the presence of parasites. Ascaris alone may produce as high as 40%.

Seventy-one per cent of malaria and dysentery free natives and 48% of negroes have a hemoglobin of 60% or less, and, therefore, may be detected by blood examination.

An additional 6% of natives and 3% of negroes will give a history of recent or former ground itch (mazamorras) and their statements in this regard are so accurate that in every case in which the history is obtained, the ova of hookworm may be found.

By combining those with low hemoglobin and those who have had mazamorras, all but about 2% of the cases will be discovered, and no patients will be selected but those infected. The 2% escaping will be those with light infections, which are least dangerous to themselves and others.

Natives do not bear successive doses of calomel well, and, as ascaris is partly removed by thymol, we have found that ascaris is best treated by a single dose of five grains each of calomel and santonin at night, followed the next morning by thymol.

In hundreds of administrations, we have had no ill results, other than a few hours of nausea or dizziness from the administration of seventy-five grains of thymol. This is given to all cases between 13 and 60 years of age, unless the hemoglobin is below 30%.

In one case, referred to above, with a concomitant malaria and protozoal dysentery, symptoms of a mild polyneuritis developed after 75 grains, and persisted for 25 days; but there were no permanent ill effects. This amount is much more effective than smaller doses. The effect of thymol is undoubtedly enhanced by a dose of 5 grains each of santonin and calomel, administered the night previous, and as so large a proportion of the patients have ascaris, a double advantage is gained by combining them. In 63 cases, so treated, who returned, after one or two months, for surgical injuries, 47 were found entirely free from ova, and in three they were to be found only after prolonged search.

Although the geographical situation of Cuyamel makes the provision of adequate facilities for the disposal of human waste a somewhat expensive measure, the writer has been instructed to prepare data as to the most economical system, and the company contemplates its introduction at the earliest date practicable. As soon as this is accomplished, we will be working in strict accordance with the following plans:

DIRECTIONS FOR A PRACTICAL ANTI-HOOKWORM CAMPAIGN IN CONNECTION WITH TROPICAL CORPORATION WORK.

1. Prepare a simple card index system, giving age, name, birthplace, with spaces for blood and fecal examinations and for brief clinical notes, ruled so that additions may be made as to treatment. One line on the card should suffice for each visit after the first. The record should not be more elaborate than can be kept during the periods of greatest amount of work. It is necessary to know what patients have received thymol.

2. Have printed circulars in Spanish, instructing the people as to the nature, mode of transmission, effects, cure, and prophylaxis, of hookworm,—couched in simple but forcible terms,—and cause them to be distributed among the people.

2. Induce the company to provide adequate measures for the disposal of human excreta, and secure the active co-operation of local police authorities to enforce the use of these measures. This should be accompanied by circulars and placards in the outhouses, printed in Spanish, and so worded as to convince the people that these measures are for their own good, and enforced with a feeling of sentiment and sympathy.

4. Determine, by the examination of several hundred cases, the percentages of infection with the different intestinal parasites. At the same time, determine the maximum hemoblogin percentage at which all patients (not anemic from other diseases) will have hookworm. The results should be reported, as they are valuable.

5. Determine the diseases prevalent in the locality, which may cause anemia, and devise a brief systematic series of questions or examinations to separate possible cases. These suspicious cases, together with occasional cases, which suggest tuberculosis, syphilis, etc., should be sent to the hospital or office for examination.

6. Examine the feces of all hospital cases, and of all cases from whom specimens can be obtained, and give treatment for the parasites discovered. Examine the blood of all those from whom specimens cannot be obtained. If the hemoglobin is no more than the maximum determined under rule 4, and the patient is free from malaria and from the diseases determined under rule 5, give him the treatment. If he has a percentage of hemoglobin higher than the maximum determined, question him as to the recent or previous occurrence of mazamorras or any itchy eruption between the toes. If the history is positive, give the treatment.

7. In cases negative in respect to rules 5 and 6, but with an eosinophilia of 8% or over, and free from skin diseases, secure a specimen if possible. If not, give the treatment, if the percentage of infection in your district is 75% or more.

8. In cases of present ground itch, treat with five-minute applications of 3% salicylic acid in alcohol, twice daily, until cured. Six weeks later, give the treatment for hookworm.

9. Unless some contraindication exists, treat all cases over 14 and under 60, with a hemoglobin of 25% or more, as follows:

On retiring	Calomel and santonin aa	grs. v
On rising	Magnesium sulphate	oz. ½
After action of saline	Thymol, to be taken within ½ hour	grs. lxxv
One hour after thymol	Magnesium sulphate	oz. ½

10. Unless the patients are debilitated, give the treatment to malarial cases of recent date in which it is indicated, a few days after the disappearance of fever.

11. Whenever the general work is slack, make a systematic review of all employees, having squads of ten or fifteen either report at the office or receive a visit at their work from one of the dispensary surgeons. Examine the blood, and by reference to the card index, determine those who have not received treatment.

12. After the work has been thoroughly covered, maintain your vigilance and, in addition, induce the company to order that no new employee shall begin labor until he has reported at the office and received examination and treatment for hookworm, or any other infectious disease he may have.

After the preliminary investigation is made, the above plan can be carried out with but little extra labor for the physicians, admitting the necessity in tropical practice of examining the blood of every case. Each physician should be able to treat from 100 to 300 cases every month.

It will lighten the labors of the druggist to have labels printed in Spanish with full directions as to the treatment. Thymol may be given in capsules or in Limousin cachets.

Especial pains should be taken not to antagonize the people in this work. An attitude of friendliness and helpfulness must be made evident to them. They are not under military discipline and any attempt to coerce them will defeat the object of the campaign. A single patient, or a number in the hospital, may be induced to furnish specimens; but if a small crowd in the field be asked for specimens, it will only result in bringing the doctor into contempt and ridicule. On the other hand, the blood specimens may be taken without their disapproval.

One of the assistants suggested that, as four-fifths of the natives have hookworm, it would do no harm to treat them all. Such a course would result in a complete defeat of the campaign. The natives, although ignorant and prejudiced, are shrewd. Their

co-operation is sure if the treatment is recommended as a result of the sincere study of their case, and if they do not feel this personal interest they are likely to throw the treatment away. They soon notice that those free from infection are the best workers and strongest men, and this fact helps to convince them.

The presence of malaria is ascertained by the blood examination, and the other diseases by the personal talk or examination. Not only are three campaigns thus simultaneously conducted, but the serious error of administering thymol to a patient suffering from severe illness is avoided. If this is done, the patient is certain to attribute his subsequent illness to the thymol, and become an adversary to the campaign. In this respect, the method of combating hookworm in use at Cuyamel is superior to that of the various commissions, unless the commission makes it a point to examine the blood of all subjects before treating them.

Although the campaign at Cuyamel is hardly more than fairly started, a number of foremen and contractors have commented on the increased efficiency of the laborers who have received treatment.

This is an appropriate place for a warning to the practitioner inexperienced in tropical work.

There is encountered a large number of patients with irregular slight fever, or a daily fever, usually appearing late in the day, with the skin pale, sallow, or jaundiced, and a moderately enlarged and tender spleen. Such cases are indistinguishable clinically from chronic malaria. As a matter of fact, most of them are not malaria, but uncinariasis. If they can be seen before the administration of quinin, the absence of plasmodia and the presence of ova make the diagnosis evident. If quinin has been given, the diagnosis is complicated by the possibility of the absence of plasmodia in the peripheral circulation being due to the quinin, and to the fact that the antipyretic action of quinin may cause the disappearance of the fever during its administration, and its tonic effects may cause a temporary apparent improvement. Still more complicated are the cases in which a recent malarial infection is superimposed upon an uncinariasis, which is the actual cause of the enlarged and tender spleen, anemia, etc. Such cases impress us with the necessity of following, in every case in which it is practicable, the cardinal rule of tropical practise, *examine the blood and feces of every patient.*

THE INTERESTING HISTORY OF A KIDNEY STONE.*

By DR. JOHN F. OECHSNER, New Orleans.

Mrs. C. H. P., 55 years old, mother of three children, gives the history of an attack of pain, about twenty years ago, over the site of left kidney—this attack lasted three or four days; she does not remember passing a stone then. All of the past winter she has suffered with a dull pain in the back, preceded one month before with a dull pain in the right side, lasting three or four days.

The present attack occurred on June 19, 1915, and consisted of terrific pain in the right side; the pain was sufficiently acute to require a sedative. After the subsidence of the acute attack, there were two or three attacks of pain of greater or lesser intensity during the week following. Examination of urine three days after the acute attack showed a large quantity of blood. The first radiograph was taken June 30, eleven days after the acute onset, and shows a foreign body apparently in the right ureter, about two inches from its termination in the bladder—this corresponds to a point opposite the lower part of right sacroiliac synchondrosis.

The second radiograph, taken July 14, fourteen days after the first and twenty-five days after the acute attack, shows apparently the same foreign body, lower down, and apparently in the bladder or at the mouth of the ureter. On July 19 at 6:00 A. M., just one month after the acute attack, the patient passed the calculus. The night preceding the passage of the stone, there was some pain and distress in the region of the bladder, and a terrible burning along the urethra—no blood was passed with the stone. The radiographs show nothing abnormal in the neighborhood of the kidney, and up to this time, there has been no recurrence of pain and the patient has remained well.

The radiographs and stone are herewith shown.

DISCUSSION OF DR. OECHSNER'S PAPER.

Dr. H. W. E. Walther: All cases of ureteral calculi are interesting because of the fact that the patient, as well as the surgeon, is desirous of knowing whether or no the stone will pass without sur-

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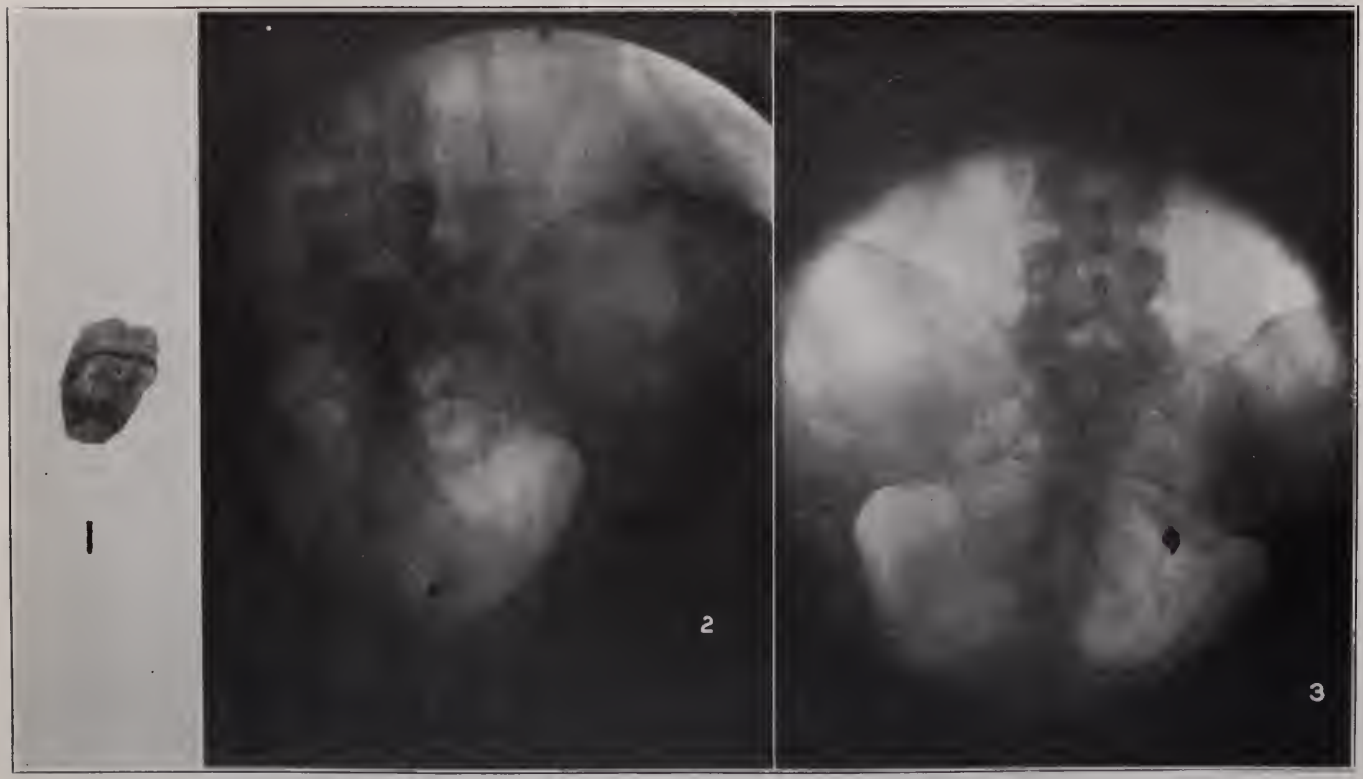

ILLUSTRATING DR. J. F. OECHSNER'S PAPER.

gical interference. In the case here reported I think that the excursion of the stone into the bladder could have been materially hastened by operative cystoscopy employing ureteral dilatation below the calculus. Doubtless some stricture or obstruction caused the delay of the passage of the stone.

When a ureteral calculus is impacted in the lower part of the ureter there are several ways in which the ureter may be made to give up the stone. We may, (1) dilate the ureter, through an operating cystoscope, with bougies; or (2) we might enlarge the ureteral orifice at the bladder by: (a) a cystoscopic knife, (b) by a cystoscopic scissors, or (c) by making a linear burn across the ostium with the high frequency spark.

In a case I had recently, the calculus had lodged in the ureter one and one-eighth inches from the uretric ostium. After manipulating the calculus by placing two No. 6 F. catheters up the affected ureter, I finally managed to bring the calculus down to within the mouth of the ureter. The opening being too small to allow the stone to escape, I made the ostium larger by burning a part of the ureteric mouth away with the Oudin high frequency spark.

Dr. J. A. Danna: As the result of two cases of this sort I wish to emphasize caution in the interpretation of X-ray pictures. In one case there was to all appearances a stone in the kidney, from the skiagraph. Upon operation, however, none was found. Perhaps the stone was passed between the time of the skiagraph and the operation. I will, however, in the future have two pictures taken at intervals to verify the first picture prior to operation. There is a great field in that which Dr. Walther has just mentioned, and I think that genito-urinary surgeons would do well to increase their efficiency in this direction.

Dr. Paul J. Gelpi: The interesting point about Dr. Oechsner's paper is that by means of the X-rays he was able to follow the progress of the stone as nature attempted to expel it. Many are inclined to disregard the real value of the X-rays in the diagnosis of renal calculus. In a large proportion of cases the findings are absolutely definite. The failures are variously put by experts at from 35 to 50 per cent, which still leaves a fair percentage of positive results. When the diagnosis remains in doubt, we have a valuable aid in the wax-tipped catheter.

Dr. Henry Dickson Bruns: I would like to know what happens to the mouth of the ureter after surgical interference, especially a high frequency current burn. Will not a secondary stricture inevitably follow?

Dr. John F. Oechsner (in closing): Had the case in question suffered any great amount of pain I would have unquestionably resorted to instrumentation. The pain subsided quite readily upon the administration of a mild sedative and I did not feel justified in interfering. I think the point which Dr. Danna has brought out is

an excellent one. Concerning the point mentioned by Dr. Bruns, I have had but little experience with secondary strictures following instrumentation, but it appears only reasonable that such should occur.

TARSAL MASSAGE IN TRACHOMA.*

By T. J. DIMITRY, M. D.,

Professor of Ophthalmology, New Orleans Post Graduate School of Medicine, New Orleans.

The writer wishes to emphasize and popularize a form of treatment which has been advocated and found beneficial, dating back probably 3400 years. That continual stumbling block, "Nothing New Under the Sun," has inspired a hesitancy on my part in contributing the following remarks. The use of this treatment has been so satisfactory, that I sincerely hope others try it and note results obtained.

The present time is opportune for contributing this article, more so on account of the recent stimulus received in the discovery of great numbers of cases in our native population in the mountains of Kentucky. It is even not unusual to find many of our Louisianians with this malady, and the disease appears on the increase in our section. It has recently been made a reportable disease by state health authorities, for statistical and preventive purposes. We are now alert on the trail of trachoma in our public and parochial schools. The literature is filled with discussions, which, as a whole, are exciting intense interest.

Trachoma is no longer a disease of aliens; it is not alone propagated by the foreigner, but is visibly increasing among our own native American population. Proper recognition of this and the not overestimated contributions appearing in government reports and medical periodicals are noted. Despite our claims to medical progress and great scientific discoveries, this disease, old as the Nile, the Simoon and the Desert, yet awaits the discovery of its etiology.

The treatment advocated by the writer is mechanical; it is essentially a tarsal massage. Its aim is to produce undulations in the tarsus by the use of the fingers, or of a glass or metal rod, provided as little trauma as possible is produced. Sæmiche's

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principle that the follicle is to be regarded as a *noli me tangere* is accepted and is a part of the explanation for the treatment suggested. For the sake of clearness and elucidation, you should be informed that there is an accepted difference between trachoma and follicular conjunctivitis. This dualistic theory is accepted by Foster, Herschberg, and Axenfeld and at a Congress in Moscow in 1897 scarcely anyone advocated the unitarian view. In 1898 at Konigsburg the members of this Congress were unanimous in their support of the dualist theory. They held that follicular conjunctivitis was a harmless condition as compared to trachoma.

To appreciate the suggested treatment it is well that we review the pathological condition of the conjunctiva presented in trachoma. Trachoma is a disease in which we have to deal with a rough, granular condition of the membrane. It is contagious, is chronic, may last years, certainly causes impairment of sight and oft times permanent blindness. The conjunctiva is the mucous membrane lining the lids and reflected on to the globe. Under the lid it is attached firmly to the tarsus. At birth this conjunctival membrane is smooth, but a few months later shows adenoid structure and is folded into furrows and ridges. The epithelium of this mucous membrane of the lids and fornix is cylindrical, while the epithelium of the globe is pavement. The trachoma we usually see is the chronic form, for unfortunately the acute condition is seldom diagnosed, since we are dependent upon certain secondary changes for an opinion free from doubt.

All important are the little yellow spots on the conjunctiva about the size of a pinhead; they are the attractive feature of the disease; these spots indicate the opening of the follicles, which are lymph cells embedded in a meshwork of the connective tissue. The disease is as yet not isolated in these follicles, but they are important for they finally produce the secondary change that follows, to-wit: fibrinous cicatrization. According to Ræhlmann, the commonest mode of disappearance of these follicles is by the expulsion of their softened contents after the epithelium covering has burst. These comedo-like plugs once expressed, the follicles become absorbed.

All else is secondary to the follicles. The lids winking with these rough granules on their under surface eventually denude the epithelial layer of the cornea; and nature, finding it necessary

to protect itself against these repeated abrasions of the cornea, provides vessels to go forward to take care of the injury. Such continual irritation results in a keratitis with subsequent hyperemia of the iris—with lachrymation and photophobia. We note edema of the lids and ptosis, the conjunctiva appearing as worn velvet. The follicles break down and leave a granulated wound which is transformed into fibrous tissue. On examination, you may usually see follicles, ulcers and scarring. The tarsus becomes involved in the process and finally distorted. Ræhlmann says it is infiltrated, thickened and undergoing considerable cicatrical contraction. The formation of Alts' cicatricial bands is merely nature's effort towards a cure. They represent the shrunken tarsal conjunctiva which has been drawn towards the edge, the retrotarsal folds taking the place of the palpebral part of the membrane.

The treatment still continues to be medicinal, mechanical and surgical. The medicinal comprehends the use of such an abundance of drugs that we can readily discard all of them in so far as a cure is to be effected from the employment of any single one uncombined with the mechanical. The surgical treatment in which the tarsus is removed finds favorable comments, but this surgical interference being less conservative, the writer would advise it only when the simpler method has failed.

The mechanical method suggested is to press out the contents of the follicles, but in doing so not to injure the conjunctiva—not to abrade it, not to grate it, not to scarify it—in fine, to produce no greater trauma than nature may readily repair; and this injury to be not larger than the orifices through which the contents of the follicles may pass. At any stage of the disease, whether it be in the acute or its final cicatricial phase with tarsal changes, this pressure or massage treatment is beneficial. After the follicular contents are expressed the desire is to make the tarsal *as pliable as wet leather*, easily manipulated under the finger movements. Such pliability interferes with new follicular formation. Small areas of scar tissue thus readily improve until what was once a rough conjunctiva with drooping lids ultimately becomes smooth tissue, practically free from scar, and permitting the full and easy opening of the lids. With the conjunctiva cured the pannus disappears, the misshapen tarsus improves and the disease is cured.

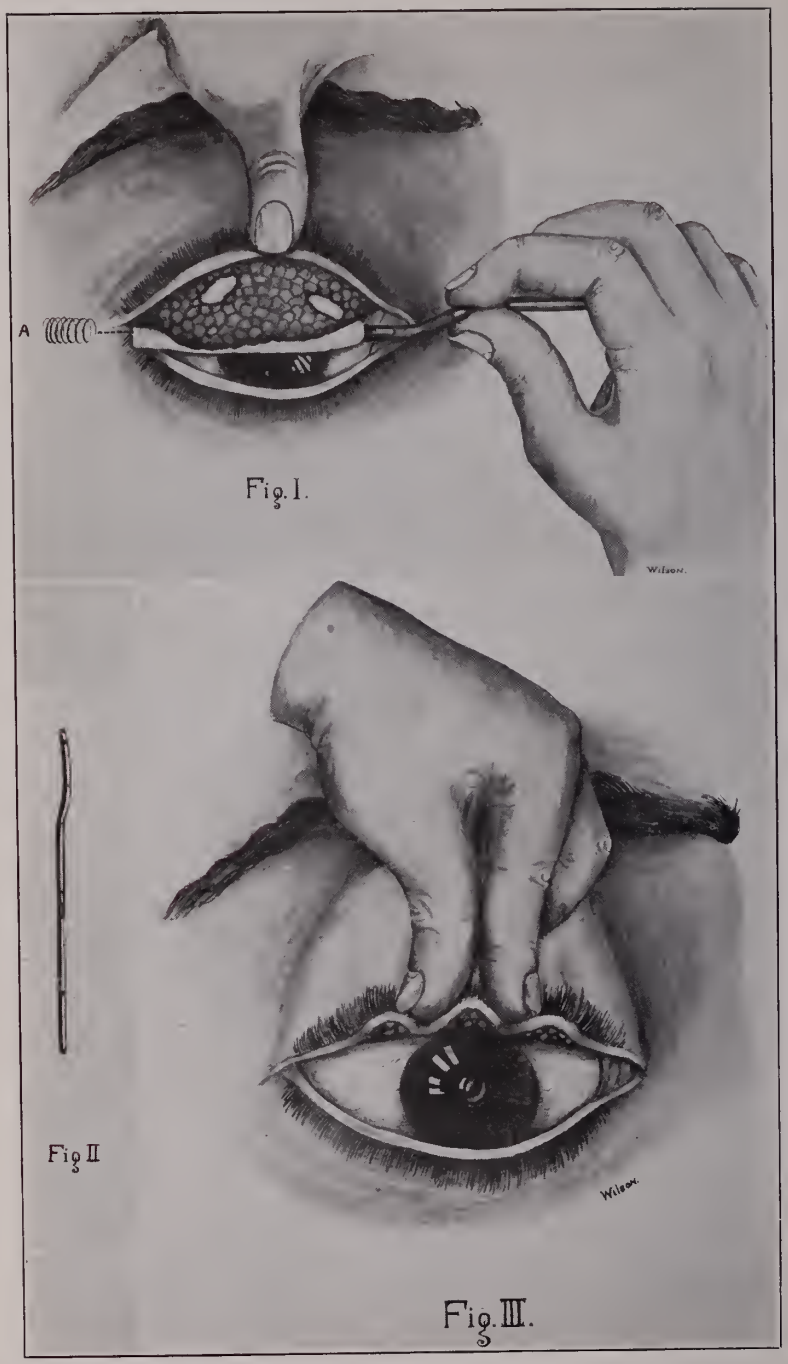

Fig. I.—Showing rod massage of tarsus (spiral A shows rotary movement of rod).
Fig. II.—Diagram of rod.
Fig. III.—Showing digital massage of upper lid.

ILLUSTRATING DR. DIMITRY'S PAPER.

The consideration of other methods in the treatment of this disease will add a clearer explanation of certain advantages this tarsal massage possesses. The copper stick is still with us, a prescription of the Papyrus Ebers. Its use occasions scar tissues.

To-day Von Schroder, Darier, Abadie, Dransart scrape and grate the conjunctiva as did Hippocrates with his prickles of Atrictylis wrapped with Milesian wool. Great number of drugs have been and are being used and some few add to the benefit produced by the mechanical method. The mechanical method has become popular and is accepted as most beneficial, but unfortunately many of these manipulations produce conjunctival injury. We know of Keining's friction with corrosive sublimate. Costomyras in 1887 massaged with the fingers, after he had covered the conjunctiva and cornea with boric acid. Boirissow rubbed the everted lids against each other. Misejewitsch kneaded the infiltrated tarsus, and Bolt says of this that the method deserves more attention on account of its simplicity and indisputable results. Galezowski in 1874 recommended excision of the fornices, and Heisrath, of Konigsburg, in 1882, introduced the excision of a part of the tarsus. This operation is a great advance in ophthalmology and the improved technic of Vossius and Kuhnt has added increased benefit.

My method of performing this treatment in the disease consists chiefly in the manipulation of a metal or glass rod about 8 inches in length and about 1/4 inch in diameter. One end of it is smoothly rolled with cotton for about 2 inches and moistened in some such solution as normal salt, boric acid, boro-glycerid or, as is my preference, 1/5000 bichlorid. Precede the manipulation by thoroughly flooding the conjunctival folds; if possible dilating the pupil and completely cocainizing the conjunctiva. The dilation of the pupil should not at any time be neglected in the course of the work. After these preliminaries the lid is turned over. The cotton-tipped end of the rod is now inserted under the tarsus, and in most cases deep into the retrotarsal folds, pressure is made upward and the lid is rolled. The thumb that holds the lid over is pressed down upon it, producing undulations in the tarsus. The contents of the follicles are now pressed out, making tarsus pliable. In following out the above indications the greatest care must be used against injuring the

cornea, and do not permit rod to scrape the conjunctiva. The same method is employed in treating both lower and upper lids. The technic, somewhat difficult of performance at first, soon becomes simple with practice.

The rod manipulation is performed every other day. The patient is encouraged to attempt certain massage by pinching his own lid, and at intervals this is also carried out by the ophthalmologist. The tarsus is caught between the index finger of both hands, and is squeezed and massaged.

The results obtained have been gratifying to myself and the members of my staff and we believe that in every case which has permitted of sufficiently long treatment we can claim a cure. The treatment generally consumes from three to six months for perfect results. I am able to present a few cases to-night that may be of interest, but before doing this, I wish to give credit where it belongs, and not to claim originality in this treatment. Tarsal massage has been used at the Eye, Ear, Nose and Throat Hospital of this city for years, and if I am correct, it was thought there that certain astringents employed produced the results and not the tarsal manipulations, as advocated for the first time by myself. The method has never been published by the above-named institution.

I shall never forget that after an extended sojourn in the East, where I frequently visited many large eye hospitals and saw numerous cases of trachoma I accepted at that time as superior the grattage method so highly advocated to-day. Its use in our city, however, met with severe criticism at the hands of our Nestor ophthalmologist, Dr. H. Dickson Bruns, who sternly objected to any technic that would produce scar tissues in what is already a scar tissue disease. I give full credit here and now to Dr. Bruns for having stimulated in me a better method than the accepted grattage. Massage is by all means more logical and in every respect superior.

DISCUSSION OF DR. DIMITRY'S PAPER.

Dr. Henry Dickson Bruns: Trachoma does no great harm as such. It is the secondary cicatricial changes in the conjunctiva, lids and tarsus, with their later contraction, which make the disease responsible for such a large percentage of the blind. There is

no such thing as a cure for trachoma in the sense of removing the already existing scar tissue, although we can hold the disease in check at the point at which it is discovered. Trachoma is difficult of diagnosis, for scar tissue is the essential factor. The average patient first uses the various eye washes on the market, then consults the family physician, who treats the case for a time and he finally reaches the ophthalmologist after at least a part of the damage has been done. If only we could see these cases earlier, the treatment would be simpler, and the percentage of successes much greater. An expression grattage operation, if done in the earlier stages of the disease may be good, but we seldom see the disease in this stage.

Comparatively speaking it is a rare disease in New Orleans. The last time I looked over the Eye, Ear, Nose and Throat Hospital records, I found only 2% of Trachoma among our patients. Of these a great part are aliens, especially Sicilians. It would seem that excellent results are obtained in the later stages of the disease by excision of the tarsus. I do not think Dr. Dimitry will cure any and all cases of trachoma in three to six months—no, not even in two years. What becomes of the scar tissue which has been produced? It certainly does not disappear or cease to contract once it has appeared in the conjunctiva any more than it does in the urethra. In brief: Trachoma is a disease which makes hundreds and thousands blind, and in a way is more dreadful than diseases which actually kill the afflicted.

Dr. J. Browne Larose: I wish to verify the good results obtained by Dr. Dimitry, in the present mode of treatment, having worked in his clinics and observed the various cases under treatment. In the acutely inflammatory stage of the disease I think this mode of treatment is liable to do as much harm as good. A preliminary course of antiphlogistic measures is indicated. Periodic remissions in the expression treatment should also be given so as to allow nature to perform her share of the reparative work.

This method shortens the stage of excessive secretion and hence lessens its period of infectivity. The tarsotomy advocated by Dr. Bruns I believe to be applicable as well after this treatment as after any other and in no measure supplants, but may supplement the expressage.

Dr. C. A. Bahn: The cure of trachoma resolves itself into the termination of active symptoms, and the production of scar tissue. The sooner the scar tissue is produced the less active contagious material there is to re-infect the eye, and the sooner the patient ceases to be a source of contagion to the family and community. This is an important point which Dr. Dimitry has omitted. To under-

stand the various treatments of the disease, we must understand its stages. After an unknown incubation period, we see first the follicular stage of the disease which lasts roughly three months. Then comes the early cicatricial period of about fifteen months, and then the later cicatricial stage over a period of years. During the first stage treatment is directed toward emptying the follicles, by Knapp's forceps, grattage, etc., and the early production of scar tissue which characterizes the disease. The large number of drugs which have been recommended only prove the fact that no single drug is specific. During the cicatricial stage when the eye is quiescent, the present treatment has merit, but during the acute exacerbations I agree with Dr. Larose, that atropin alone is productive of the best results. The eye is usually deeply injected and very sensitive, why make it more so by artificial manipulation. During the later stages of the disease the present treatment has merit, but here I agree with Dr. Bruns, that the scar tissue has been produced and manipulation will not remove it, any more than it will in the urethra or elsewhere. A diagnostic point, for which I am indebted to Dr. Feingold, is that follicles on the ocular conjunctiva in doubtful cases are trachomatous.

Dr. Dimitry (in closing): The results obtained are shown in these two cases presented. Other cases disappointed me in not making an appearance here tonight. Two of the cases had been treated one year and a half ago and still remain cured. This young man here shown was for fifteen months treated before reaching my clinic. My assistant, Dr. Dunn, had treated this case for two and a half months and he deserves credit for the cure. I cannot agree that you might expect results from atropin and cocain as a cure for trachoma. I have always taught that such was piddling. I do not believe that follicles on the conjunctiva are pathognomic of trachoma.

Dr. Bruns tell us that scar tissue will contract to the end of the pages and the palpebral aperture will become smaller. I doubt that scar tissue will contract to the end of the pages and I would ask one of our physiologists to confirm or deny this belief of the doctor. I think very favorably of the operation of the removal of the tarsus, but it is only justifiable after this simpler treatment has failed. A few months ago I removed the tarsus in an elderly gentleman, not because he had trachoma, but for the reason that he suffered with scar tissue produced in the tarsus by repeated incisions conjunctively for multiple chalazia.

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FRACTURE-DISLOCATIONS OF THE CERVICAL VERTEBRÆ.*

By J. T. O'FERRALL, M. D.,

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AND

W. P. BRADBURN, M. D.,

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It has been my good fortune in the past, during my internship in the Massachusetts Hospital, to observe several cases of non-fatal injuries of the cervical spine and thereby gain much knowledge that many of my associates here have not gained by not realizing the importance and frequency of such conditions. It is to emphasize the seriousness of not recognizing these cases, to impress upon you the frequency of such lesions after minor injuries, and to report three cases which I have seen since returning to New Orleans, that prompts this reference to some of the cases reported in the literature and descriptions of those seen here.

Until recently very little knowledge has existed in regard to the real pathology of traumatic lesions of the upper spine, whether fatal or non-fatal, and even now the literature contains little that enlightens us to a great extent. Some very careful study has been devoted to the cases reported in the current medical periodicals, and in one instance a very original and scientific operation has been done by Drs. Mixter and Osgood, of Boston, with recovery of the patient. As this case is so unique, I will give a resume of the same later in this paper.

As stated by the above surgeons (*Annals of Surg.*, Feb., 1910) probably the most important contributions to the literature are those by Walton (*Boston Med. and Surg.* Jno., Oct., 1913), Corner (*Annals of Surg.*, 1907) and Van Assen (*German Jour. of Orth. Surg.*, Vol. 21).

Walton describes in detail the causative factors in the production of dislocations of the cervical spine and suggests a reasonable method for reduction. The dislocations between the upper cervical vertebræ, especially the atlas and axis, are rotary and generally unilateral, the upper vertebræ on the side of the lesion

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slipping forward and catching on the articular process below or into the intervertebral notch. These dislocations are much the same as the forward dislocation of one of the articular processes below or into the intervertebral notch. These dislocations are much the same as the forward dislocation of one of the articular processes of the last lumbar vertebra, which occurs very often in girls who have reached the age of adolescence, thereby increasing the lumbo-sacral angle. This fact has recently been advanced by Dr. Z. B. Adams of Boston, as a causative factor in many cases of scoliosis. These cervical lesions are not usually fatal and cause no symptoms of cord pressure.

Corner's article is very interesting and he lays stress on the fact that the head, in order to allow of free motion, is held by muscles and ligaments and, if any injury is produced suddenly and unexpectedly, the integrity of the upper cervical spine is often lost, producing both the dislocation and its accompanying fracture, if any. He, too, believes that the unilateral rotary dislocations are the most frequent and are non-fatal; that they are all accompanied by fractures. In six out of eight fatal cases the odontoid was fractured. He finds it very difficult to make a diagnosis of bilateral dislocations and fracture of the odontoid. Of the fatal cases, death occurred in two cases soon after the injury; one in two hours; one in twenty hours. In six, death in from 23 days to several years. No spinal cord symptoms appeared in the beginning: these usually occur within a few days to several weeks after the injury. He mentions the fact that many cases are overlooked and the penalty for same is often sudden death. A very guarded prognosis should be given because of the onset of a myelitis.

Van Assen's paper attempts a review of the literature and report of a case of fracture of the posterior arch of the atlas and of the odontoid process. In twelve cases, collected by him, of fractures of the axis, nine times the odontoid only was broken; of nineteen cases of injury of the atlas, only one was recognized in the patient before death.

The injury, in these cases, is produced in a variety of ways, but most often by blows on the top and fore part of the head and as the result of falling from a height, as down the stairs. However, many serious lesions of this nature have been produced by simple muscular action. As far as possible, I will re-

cite a case from the literature and one of my own, illustrating the way these lesions are produced.

The type of lesion most commonly seen, and in all probability the one least frequently recognized, is that of unilateral rotary dislocation with fracture. It is probably so frequently overlooked because of the absence of severe symptoms and also because of the accidental reduction of the dislocation. Because of the anatomical peculiarities of the atlas and axis, with which you are familiar, the rotation most frequently takes place at this region of the spine.

The lesion next in importance and frequency is that of fracture of the odontoid, usually with a unilateral but often with a bilateral dislocation of the atlas. This is easily demonstrated by the use of the radiograph, and in several reported instances the patients have lived and no evidences of cord pressure have been manifested.

The next type of case, seldom seen, is that of fracture of the lateral masses, arches and bodies of the vertebræ. Two cases are reported by Drs. Mixter and Osgood, also one case by Van Assen.

The symptoms that result immediately from these upper cervical injuries vary from instant death to very mild symptoms, that is, scarcely nothing but neck rigidity and pain with asymmetry of the head. It is rather remarkable to think of the lack of severity of these cases, however. I desire to impress upon you the importance of suspecting any cases of occipital neuralgia, neck rigidity with increase of pain upon attempted passive motions, as possible cases of bone lesion. We have every means of an accurate diagnosis, and we owe it to ourselves and to our patients to guard against a possible error.

The symptoms that usually persist are pains of a neuralgic character over the occiput, neck and shoulders; marked rigidity of posterior and lateral spinal muscles (if a unilateral subluxation, usually the muscles on that side are in greater spasm), and greatly increased pain upon attempted motion. Many times attempts at manipulation or forced motions produce fatal results. The end results in many of the reported cases, with a dislocation of rather marked degree, is a myelitis produced by the constant

slight pressure from the dislocation or from the callous formation in the case of a fracture.

The diagnosis, which is of course of the greatest importance, is accomplished without difficulty. Our first inspection of the patient often gives us a very decided suggestion as to the exact nature of the subluxation or fracture. For the purpose of clearness let me illustrate—with a right rotary dislocation of the atlas, whether it is slightly subluxated or the articular process has dropped into the anterior notch, the head is rotated to the right and the chin points to the left with the neck, of course, rigid. If a bilateral dislocation, the head will be carried forward on the spine and tilted back. Fracture of the odontoid usually accompanies this dislocation. The very marked prominence of the upper cervical spine, taken as a whole, is very evident when a bilateral dislocation occurs.

Upon palpation we find the spinous processes not in line, one with the other, and are more or less prominent as the case may be. If the spine of the axis is abnormally prominent, a fracture of the odontoid is suspected. Normally the transverse process of the atlas can be felt midway between the tip of the mastoid process and the angle of the jaw. As Corner has stated, in rotary dislocations of the atlas two abnormal prominences may be made out, one due to the forwardly displaced transverse process and the lateral mass of the atlas on the side of the dislocation, and the other on the opposite side a little lower down, which is that part of the axis made more prominent by the slipping back of the atlas. Examination of the pharynx, preferably under anesthesia, is of great importance, and often reveals a ledge or undue prominence on the posterior wall.

The importance of the X-rays in making a diagnosis of such conditions is almost beyond description and is obvious to all. Lateral radiographs are not difficult to make and present perfectly, as a rule, any antero-posterior abnormality. In order to show the atlas and axis at all and the odontoid process well, the antero-posterior view should be made with the patient's mouth as wide open as possible. This gives an excellent view of the odontoid and the lateral masses of the atlas and axis. The most important points of diagnosis to keep in mind are: 1. The position or asymmetry of the head; it is well to remember that the chin points away from the main lesion. 2. The position of

the transverse process of the axis. 3. The results of the digital examination of the pharynx. 4. The lateral and antero-posterior radiographs of the upper cervical spine, the latter taken with the mouth as wide open as possible.

The differential diagnosis should be made from Potts' disease, the history of which is of great importance, also the radiographs and tuberculin tests. Another similar condition is torticollis, which presents a definite spasm of the sterno-mastoid on the opposite side and the power of rotation is present.

The treatment in these conditions is not fraught with great difficulty, but good results are largely dependent upon careful consideration and intelligent interpretation. If one can thoroughly convince himself that he is dealing with a simple unilateral subluxation, intelligent manipulation may be done with safety and perfect results. The manipulation suggested by Walton, and which seems most rational, is as follows: First by freeing the dislocated inferior articular process of the upper vertebra from its position by lateral flexion away from the dislocation and slightly backward, then rotate toward the dislocated side and slightly forward. This uses the undislocated side as a fulcrum to raise the dislocation.

It has been my plan to apply a Thomas collar or simple traction, in connection with sandbags, until an accurate diagnosis can be made. If one is suspicious of a fracture of the odontoid process it is particularly necessary to give the head and neck as much fixation as possible, that is, with a plaster helmet or Minerva jacket. If we follow the method of Corner, in cases of odontoid fracture, the head will be immobilized for three weeks and then under ether an attempt at reduction with the finger in the pharynx will be made.

If complete reduction fails and there are no symptoms of cord pressure, a Minerva jacket with the head held in full extension should be applied and worn for six weeks to two months; if upon removal of the jacket the patient continues to experience some pain and difficulty in holding the head, a permanent apparatus should be made. I will show you the type of apparatus I consider most efficient in such cases.

The operative side of these conditions has apparently never been considered by any of the authors I have been able to look up except Drs. Mixter and Osgood, of Boston, whose case is so

orinigal and unusual I will give a resumé of same as detailed by them:

R. M., age fifteen, was seen in July, 1906. Five weeks previously he had fallen from a tree striking his head against the limb on the way down. Immediate pain and stiffness of the neck followed with a swelling on the left side high up. The condition had been unchanged and there was no symptom of paralysis, however, there had been acute paroxysms of pain during which the boy asked to be killed. Pain radiated over the head and down the shoulder and arms.

Examination showed a sick looking boy. X-ray taken at this time revealed no lesion. All motions of the head were restricted and painful. The chin pointed to the right. Temperature 100 degrees F. A rotary dislocation of the atlas and possibly the axis was suspected and the boy sent to the hospital. Under an anesthetic gentle manipulation was performed with apparent return to normal conditions and almost complete flexibility. This condition remained for a few days and the boy taken home against advice. Six months after the accident he was again seen and because of the very severe occipital neuralgia a second manipulation was done with the same apparent result. The X-ray still failed to show a lesion, however, the boy was fixed in a complete plaster helmet with relief of symptoms. This was worn for one month and upon its removal a Thomas collar was applied. In one week the symptoms had recurred with added severity and upon examination the spine of the axis and third cervical vertebra were found more prominent and a fracture of the odontoid for the first time suspected and confirmed by X-ray.

A leather cuirass was made from a plaster model and the following operation performed: The boy was placed in the ventral position, the head being supported manually over the end of the table. A four inch linear incision was made in the median line of the neck until the hooked spine of the axis was found. Then the posterior arch of the atlas was exposed. With an aneurism needle a stout braided silk soaked in compound tincture of benzoin was passed about this posterior arch between it and the spinal cord. While forward pressure on the anterior arch was made through the pharynx, traction was made on the posterior arch. There was firm resistance to replacement and only a small amount of reposition was accomplished. This was maintained, however, and the atlas firmly anchored by tying to the hooked process of the axis. The recovery was uneventful and the apparatus worn for two months, after which it was gradually omitted and up to the present time, two years after the operation the patient has remained well without symptoms except a slight stiffness of the neck.

This is a very unique case and the operation well thought out and splendidly done.

Case 1. This case which I had the pleasure of seeing with Dr. W. P. Bradburn is as follows. This history and the remarks were prepared by Dr. Bradburn very accurately, and in his absence I am reading them for him.

Case of John I., aged 26, a brick layer by occupation, was injured on the 2nd day of July. While bending over his work, the report says, a workman two stories above him dropped a thirty pound block, which struck the patient directly over the back of the neck. The patient became unconscious and remained so almost until his arrival at the hospital, three-quarters of an hour to one hour later. He was seen by me upon his arrival at the Presbyterian Hospital. The patient appeared greatly shocked and complained of great pain in the back of his neck and his head. Examination showed perfect control of the extremities, and appreciation of both the sense of touch and that of pain. No evidence of blood found in the nose, ears, throat, etc. Pupils were equal and reacted to light. Temperature, 98-6°. Pulse, 76, respiration 14. The patient seemed to be in such a condition that an X-ray was thought advisable for the injury to the upper vertebra, and this was taken at once. The patient was put to bed, ice bags applied, and bromids given. Morphin had previously been given in the dressing room. Later in the day he complained of pain in swallowing. The X-ray report was not definite of any marked injury to the upper vertebræ. Patient was continued on liquids, bromids, codein when necessary, and ice bags continued. The following day pain was well marked over the entire occiput, posterior portion of the neck and upper dorsal vertebræ. This region was so sensitive that it was absolutely impossible to touch it. The patient continued in this condition, improving gradually. On the 5th, patient's general condition good, no evidence of disturbance, motion, pain, or sense disturbance, patient was put on soft diet and allowed up in rolling chair. The pain in the region above described, that is, the back of the neck, occiput and between the shoulders, continued, and was as severe as at first. Warm baths had been given on the 7th, 8th and 9th, patient feeling more comfortable after the baths. On the evening of the 9th of July, the 8th day after the accident, in getting out of his chair and going to the bed, he felt sudden pain in the region of the neck. Following this almost immediately there was some tingling of the lower extremities. The next morning, patient unable to move the toes, an ophthalmoscopic examination was made which proved negative. Examination of the back of the neck showed marked spasm of the muscles on the left side. Sensation was now absent in both great toes and lessened appreciation in both arms. However, in endeavoring to obtain patella reflex, the patient complained of marked pain which was present at subsequent examination. Dr. J. T. O'Ferrall was called into consultation, and he agreed that there was some disturbance, probably pressure on the upper cord. A Thomas collar

was applied. The following morning, after the application of the Thomas collar, patient was able to move the toes, although sensation was diminished. Arms apparently normal. On that same afternoon, however, loss of motion in toes was present. This condition of loss of power to control toes in the morning, and inability to move same in the afternoon, continued until patient left hospital on the 14th of July, to return home against advice. The hyperesthesia of the occiput, back of the neck, and shoulder, still persisted and in even more marked degree since the 9th of July, when he experienced the pain in getting out of the rolling chair. Patient was not seen until the 16th. Nothing new of note. On the 18th he was again seen, and reported that since the 16th he had been absolutely unable to move his lower extremities, and absolutely insensible to pain. This was confirmed on examination with the exception of marked tenderness on trying to elicit the patella reflex which was negative. Examination further disclosed appreciation of touch of the upper extremities and chest, but loss of the appreciation of a sense of pain, principally over the region of the pectoralis muscles, scapula, arms, forearms and fingers. Pain still present in the same marked degree. Here it might be stated that throughout this entire condition patient had entire control of both bladder and rectum.

On the 19th Dr. O'Ferrall and myself decided to apply extension. An 8 pound extension was applied to the head, and as counter-traction the bed was elevated 8 inches. Patient was left in this condition, complaining particularly about the pressure of the bandage about the head, the point of marked tenderness all along. On the 20th the patient was seen and without any questioning gives the following history, which is of particular interest: About 15 minutes after extension was applied on the 19th, patient felt a sudden sharp click, and heard the same. About one-half hour after extension was applied, patient believed that he was moving his toes although the family assured him that he was not. In two hours after extension was applied, patient was able to move the toe and later the leg. Patient felt so greatly relieved about 10:30, that is about 8 hours after the application of the extension, that we removed the extension and applied the Thomas collar. When seen on the 20th, patient claimed that he was able to get out of bed and walk, which was done to my astonishment. Examination of the lower extremities showed no tenderness on eliciting the patella reflex, apparent perfect appreciation of pain and touch over the pectoral region, arms and forearms, and the lower extremities. Marked hyperesthesia of the back of the neck and occiput between the shoulders had disappeared and examination could be made. A Minerva jacket was decided upon immediately and applied on the 21st of July, at the Touro Infirmary. The patient was able to go up to Touro in an automobile and walked into the plaster room. No marked discomfort was experienced in the application of the jacket. Patient's gait at this

time was slovenly and he was at this time unable to have absolute control over the extremities. This, however, was noted to improve according to the length of time the cast was left on.

On the 30th of August the cast was removed after 6 weeks. The extremities were normal in reacting to touch, pain and relfexes, and the upper extremities the same. Patient, however, complained of some slight pain between the scapulas, probably due to the slight pressure of the jacket, and a slight tenderness over the occiput. The Thomas collar was reapplied to offer some support. When seen three days later the patient's head was drawn down toward the right side, and spasm noted of the posterior group of muscles of the right side of the neck. This dropping of the head to the right side had been gradual since the removal of the cast. On September 5th patient complained of the neck on the right side and when seen it was thought advisable to apply a higher Thomas collar. A ⅝ inch raise over the original collar was given and it was apparently well supported, and patient felt much better. The slight dizziness which he had experienced for two days previous to the 5th cleared up almost immediately on the application of the higher collar. Further observation has not been made by me on this case since the 5th.

In reviewing this history there are several points of interest that seem of importance.

First. The marked shock upon admittance with absence of definite findings as to nasal fracture or any symptoms of pressure on the cord.

Second. The continued hyperesthesia over the region of the occiput back of the neck and over the upper dorsal vertebra, throughout the entire case until relieved by extension.

Third. The almost sudden onset of symptoms of cord pressure, accompanied by unusual pain in the back of the neck, following the sudden movement of the patient going from the chair to the bed.

Fourth. The small amount of weight applied for extension, an eight pound hand iron.

Fifth. The almost immediate relief after extension was applied, and further, the short space of time—fifteen minutes in the patient's own statement, before he felt the click and very probably the reduction of the displacement.

Sixth. The ability of the patient to walk the day following this extension, after being in bed practically for three weeks with almost entire loss of control.

Seventh. The comfort the patient experienced from the jacket after having become used to the same, and the gradual improvement in his slovenly gait to one of almost absolute firmness.

I will now show you the radiographs in this case, the Thomas collar first worn and the Minerva jacket worn by him for six

weeks and from which the permanent jacket he now wears was made. You can readily see, if you care to examine the patient, the present condition of his neck and a marked tenderness he continues to have despite the apparent reduction of his rotary dislocation. The radiographs so far have failed to reveal a fracture of the odontoid. A second radiograph was made which shows the apparent reduction accomplished and the odontoid process still intact. They show a slight forward displacement of the axis on the third vertebra when looking at the lateral view and a tilting of the axis towards the left side when looking at the view through the mouth. The man has been mentally relieved by his fixation and I believe in six months' time will be able to go without a permanent apparatus.

When first seen the neck was very rigid, especially on the right side, and the chin was turned to the left. He experienced extreme tenderness over the cervical region and over the occiput. His relief was immediate upon the application of the Thomas collar and remained so until the onset of the symptoms just described in the notes from Dr. Bradburn.

Case 2. A second case which I have seen here and which I had hoped to show you, but who has removed from her former address is as follows: This case like others you will find in the literature will illustrate to you the ease by which these cases occur. Edna F., age 12, was seen by me February 9, 1915. One month previously after playing as usual went to bed with a pain in the right shoulder. Awoke the following morning with the neck very rigid, the head drawn to the right side and the chin pointed to the left. Since that time she has had a great deal of pain in the right shoulder and neck. She denies very positively any injury. History otherwise is negative.

The physical examination showed a well developed and nourished child with cervical spine very rigid, head drawn to the right and chin pointed to the left; any attempts at passive motion were very painful. There was felt a hard mass the size of a marble just to the left of the mid line of the cervical spine at a level with the second cervical which was probably the left transverse process of the axis made more prominent by the right rotary dislocation. A corresponding mass on the opposite side was not felt. Her tonsils were large and red. Digital examination of the pharynx was not satisfactory. A diagnosis of dislocated second cervical was made and confirmed by the X-rays which were unfortunately lost at the Char-

ity Hospital. They showed, however, a distinct rotary dislocation (right) of the axis on the third apparently without any fracture. The Thomas collar was applied immediately with some relief. As she was then sent to the hospital where simple traction was applied, a picture of which I will pass around, which did not apparently reduce the dislocation but which gave immediate relief and all motions of the spine returned. After six weeks of traction a Minerva jacket was applied and worn for two months. Since the removal of which the patient has remained a normal child. This case was undoubtedly produced by simple muscular action while the child was at play without producing serious symptoms.

Case 3. This case I happened to see through the kindness of Dr. E. S. Hatch, who requested me to help in applying the Minerva jacket. The patient, a man of sixty odd years, while walking across a trestle fell some twenty feet, striking on the back of his head. He immediately experienced great pain and the neck became very rigid. Upon examination the patient held his head slightly to the left and with chin drawn down. All attempts at passive motion were very painful and the patient was suffering some neuralgia pains in his shoulders. The X-ray examination revealed a fracture of the lamina of the third cervical vertebra. A Minerva jacket was applied in full extension and as far as I have heard the patient has made an uneventful recovery.

Case 4. During my service in the Massachusetts Hospital I had the good fortune to see a little girl who while playing in bed with her brother they bumped their heads. The little girl complained immediately of great pain in her neck and at any attempt at motion she cried bitterly. She was seen the following day and besides the neck rigidity the chin was pointing to the left and upon pharyngeal examination a ledge could be felt on the posterior wall. The X-ray showed a rotary dislocation of the second cervical. Traction and later a Minerva jacket relieved the condition. This case illustrates the minor injuries which can cause such conditions.

Other cases which will be of interest to you are to be found in the following records:

Mixter and Osgood, *Annals of Surgery*, Feb. 1910, Massachusetts General Hospital records, Orthopedic Dept. 1913 (unpublished).

Bayard, *Boston Medical and Surgical Journal*, N. S., 1870, volume 5.

Corner, *Annals of Surgery*, Jan., 1907.

Eberman, *American Journal Medical Sciences*, Phil., 1879.

Legg, *Lancet*, 1893.

Walton, *Boston Medical and Surg. Journal*, Oct., 1903.

Wilson, *Annals of Surgery*, April, 1907.

A CASE OF HEMOPTYSIS, EVIDENTLY OF SYPHILITIC ORIGIN.*

By A. L. LEVIN, M. D.,

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The purpose of this paper is to emphasize that pulmonary syphilis is not as rare a condition as it is considered to be. In this respect, my belief coincides with that of J. Blinder, who is of the opinion that a study of every case with basal pulmonary lesions and negative sputum would reveal syphilis of the lungs much more frequently than at present. It is really surprising that our eminent writers on modern medicine have failed to caution us to bear in mind pulmonary syphilis in lesions of the lungs which are difficult to diagnose. The latest edition of modern medicine by Osler & McCrae, on the subject of hemoptysis, the writer enumerates twenty probable causes for that phenomenon of blood-spitting, but fails to mention syphilis as a probable cause. J. N. Hall, on hemoptysis, Borderline Diseases, Vol. 11, mentions a case of a policeman under his care, in whom Dr. Levy demonstrated a syphilitic ulceration in the left bronchus, just at the point of bifurcation, who has had severe attacks of hemoptysis, extending over a period of a dozen years or more. The case reported by Blinder (*Med. Rec., Aug. 22,* 1914) was mistaken for pulmonary tuberculosis for over a year. The patient had all the cardinal symptoms of pulmonary tuberculosis, but repeated negative results from examination of sputum and the situation of lesion at the base of the lung, led to examination for syphilis of the lung. The history of a primary lesion, positive Wassermann reaction and quick response to antisyphilitic treatment, with final recovery, proved conclusively that syphilis was the causative factor.

In the last three years, the case which I am to report to-night is the second one in my experience. The first case came under my observation in May, 1912. There was a history of a chronic cough for about 10 years. Hemoptysis and high temperature developed suddenly in May, 1912, profuse muco-purulent expectoration with occasional hemoptysis persisted for months. A diagnosis of abscess of the lung was made and treated heroically

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ILLUSTRATING PAPER OF DR. A. L. LEVIN.

as such, with very slight improvement in the local lesion of lung and general condition of the patient. In September of the same year, through the courtesy and charitable spirit of the late J. C. Rathborne, I sent the patient to Asheville, N. C., with a detailed report of the case. The base of the right lung was dull, in spots almost flat on percussion; repeated sputum examinations for T. B. were negative. The physician in Asheville who attended to the case gained by our failure to admit syphilis into the field. He diagnosed pulmonary syphilis, and cured the patient in a short time. I see the patient often, and for the last three years he seems to be in good health.

This case which I am to report now is interesting, because the lesion is evidently at the apex. The differentiation between phthisis pulmonalis and the so-called "phthisis syphilitica" is a matter of great difficulty. The symptoms and signs in both are practically alike. In syphilis, however, the physical signs are more commonly at the root of the lung and towards the base. With our present knowledge of the specific organism, we should expect more light on the subject. The diagnosis in my case is rather easy on account of the presence of a gumma of the clavicle for many years, the existence of which did not seem to worry the patient very much, but the sudden onset of hemoptysis frightened him, and he sought relief.

The case is as follows:

G. O., wht. male, age 44, native of Sweden, porter by occupation, applied to me for treatment in Clinic 17, C. H. 7/2/15. Family history negative. Personal history: Fifteen years ago, primary luetic infection; has suffered from malarial attacks several times, last one about 5 years ago. Seven years ago, lost his left hand up to the wrist through a train accident. Since then he claims his health was never good. For the past three weeks he has developed a slight hacking cough. On several occasions during that period he coughed up about a teaspoonful of bright red blood. He admits that for the last 4 or 5 years he has been drinking alcohol heavily. Does not suffer from any pain, but feels dizzy and feverish, appetite very poor. About 7 years ago, he began to notice at about the middle of the left clavicle a small growth, which at that time was quite painful, but when the growth began to develop and become larger, the pain disappeared. At present the tumorous mass, which is hard and bony in consistency does not cause discomfort in the least. He wouldn't come to the clinic for that. The appearance of blood frightened him, he also began to lose in weight; no night sweats, bowels are regular and no urinary disturbance. Examination re-

vealed the mass over the left clavicle as described. Lungs, dullness, almost flatness over tumorous mass, a little beyond the mass, downwards, no apparent difference in the two lungs on percussion or auscultation; neither rales nor an abnormal respiratory sound were elicited. Heart—faint systolic blow at apex, not transmitted, no accentuation of second sound. Abdomen—negative. Urine—negative. Temp. 99 4-5°, pulse 122. Sputum for T. B. (Specimen obtained mixed with freshly expectorated blood) negative. X-ray—bony tumor of clavicle. Blood for Wassermann, original and Tchernogubow, both strongly positive. In view of these findings, on July 7, I put him on the mixed treatment. Salvarsan would be too dangerous in this case, and neosalvarsan is not on the market at present.

7/21/15 Improved, temp. 99°, appetite better. Three days ago, coughed up a little pure blood.

7/28/15 Coughs very little, no blood, gaining in weight. Temp. 99.

8/6/15 No blood. Appetite poor. Ordered mercury by inunction and large doses of K. I.

8/13/15 Gained 4 lbs. No blood for 5 weeks. Mass at sternoclavicular end, somewhat smaller and softer. During the inclement and stormy days in the middle of August, he slept between two open windows. He felt chilly and the wind caused a dryness in his throat, it brought on a coughing spell for 15 minutes and about one ounce of pure blood came up at the end.

Anti-syphlitic treatment continued. Since then, no blood, feels a great deal better, has gained in strength considerably and also in weight. No cough and no blood so far.

Another small mass observed over right parotid gland which began to develop in the last few months, not painful.

Von Pirquet negative.

RADIUM AN ASSET TO SURGERY.*

By CARROLL W. ALLEN, M. D.,

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Medicine, like fashion, has its fads and follies, and in our zeal and enthusiasm to relieve and cure the sick we are often led astray to worship false gods, and retrace our steps back to the orthodox after much wasted time and energy. In the short space of my experience I have witnessed the introduction of many fads, some of them sufficiently seductive and alluring to deceive men of undoubted judgment and ability, who advocated them for a time, only to see their error later. Such were the

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universal use of the X-ray for all malignant growths which followed close upon the heels of its discovery, the methylen blue injection and that of trypsin for malignant neoplasms, the treatment of pneumonia by massive doses of quinin, and the hyoscin, morphin, cactin method of anesthesia, which so congested our literature a few years ago. With these and other lessons fresh in my mind, I looked upon the use of radium in medicine with much caution and doubt. I demanded convincing proofs, proofs which would stand the test of time, facts which would not lie, but would bear the closest scrutiny in the bright light of day.

With this spirit I approached the subject. I sent patients to be treated by those who had the radium; they could then return to me for observation.

Mr. L. proved a most convincing case. Referred to me by Dr. J. T. Wolfe, in the early part of 1914, he was operated upon in the Delgado Memorial for a tumor of the anterior chest wall of about nine months duration, which measured about 4x5 inches in diameter. A rush diagnosis confirmed later by more deliberate study showed it to be a round cell sarcoma. The excision was wide in all directions and the base well cauterized with the actual cautery.

Recurrence in situ occurred promptly. As surgery promised little he was sent to Dr. Kelly, of Baltimore, and remained there several weeks under radium applications.

He returned with the wound well healed. It remained in this condition for over one year, when last month a small nodule developed in the margin of the old scar. It was removed and found to be a spindle and giant cell sarcoma. Note that the original tumor was round cell. Radium was now applied freely all over the old site.

Other cases have done as well, but I will not burden you with an array of histories but will limit myself to citing the facts. I may say in starting that I am yet to see a case of malignancy except of the superficial skin type which has been cured by radium alone, but many have had their lives prolonged in comfort for months and years, free from hemorrhage, pain and putrid discharges when their cases were at the beginning clearly inoperable, the external growth usually being controlled, death resulting in time from the less trying internal metastasis.

My personal experience, while limited, is sufficiently varied to permit me to draw fairly accurate conclusions regarding the value of this agent.

In malignancy it is never a substitute for operation, but finds

its field of usefulness in a merciful palliation in inoperable cases. Its work begins where the surgeon halts his knife. Its use as an adjunct to surgery before and after operation is yet too recent for statistics to show to what extent it has retarded or prevented recurrences.

In the inoperable cases its results are at times brilliant, but occasionally disappointments occur, but here we must remember that we are using it in cases which formerly found their only solace in morphin.

The use of radium is in its infancy and we have much yet to learn. Illustrating this point as well as showing the powerful effect of this potent element, I will recite two cases.

Mr. D., a young man seen by me last winter, has been abandoned as hopeless. He had been operated six months previously for a tumor of the right iliac fossa which proved to be an inoperable adenocarcinoma. At the time I saw him the mass was as large as a child's head and filled the entire right lower quadrant of the abdomen, it had extended through the old incision and presented a fungated mass externally, somewhat larger than a man's fist.

The patient was extremely emaciated and confined to bed and there was evidence of beginning intestinal obstruction. The possibilities and limitations of radium were explained, but the family and patient wished a trial. Under its use, 50 mg. of radium element applied twice a week, this mass steadily diminished and the fungated external portion entirely disappeared, and the abdomen became quite flaccid again; where the growth invaded the bowel wall its destruction resulted in fecal fistula which became quite trying for a time. The progress of the growth could, however, be detected by deep palpation along the posterior abdominal wall. The patient finally succumbed to exhaustion after several months. This was a very advanced and hopeless case, even for palliation, but showed, in a striking manner the powerful effect of the radium upon the accessible parts of the growth.

A tumor of the bladder, a case of Dr. F. R. Gomilla's, also proved unsatisfactory.

An aged lady with a history of vesical hemorrhage for three years presented a large mass on the floor of the bladder, which protruded slightly into the vagina and was fixed to the pubic arch on the left, clearly an inoperable condition. The bladder was opened under local anesthesia and a test tube passed down in contact with the mass which was seen projecting into the bladder and occupying about one-third of its base. The tube of radium tied to a string was dropped down to the bottom of the test tube so that it was in close contact with the growth. Four applications were made, of 50 mg.

of radium element, for twelve hours each, at intervals of three to four days. At the end of two weeks, when the patient left the hospital, the mass was about one-third its former size and was rapidly disintegrating, numerous sloughs being thrown off through the bladder. This continued for some time after leaving the hospital, when evidences of sepsis with thrombosis of the iliac vein on that side developed and the patient died in a few weeks. Vesical tumors are among the most unpromising for relief from radium and knowing this fact, I made the applications at rather frequent intervals and in heavy dosage.

As the tumor mass had already infiltrated the bladder wall and gone beyond, its too rapid destruction, too fast for the normal tissue to close in behind it, permitted urinary infiltration with sepsis and its results.

The normal bladder wall had not been destroyed, as I examined it before she left the hospital, and found it intact with the tumor mass rapidly breaking down. Normal tissue is estimated to be seven times more resistant to the action of radium than in any new growth, of course it will be destroyed if over-exposed; but this fact permits the rays to penetrate normal tissue destroying within it any malignant infiltration, and leaving the normal tissue intact to close in the gap. In the treatment of any vesical growth, which has already passed well beyond the bladder wall, the danger of urinary infiltration must always be considered, the idea being to destroy the tumor gradually, permitting the healthy tissue to close in behind it. It is evident that this case was over-treated and results might have been better if the exposures had been made at longer intervals.

The effective penetration of the rays is about three or four inches in all directions, so that tissue a considerable distance from the point of application is favorably affected.

Radium should never be considered as a substitute for operation, but finds a valuable field of usefulness in inoperable conditions, and may frequently so shrink or diminish them in size as to bring them again within the limits of operability. On the exposed parts of the body, malignancy rarely reaches an inoperable condition, unless grossly neglected by physician or patient; here it is most often the inoperable recurrence that finds palliation in radium. In the deeper parts of the body primary malignancy is often inoperable when detected. Within the abdominal cavity results are, not as a rule, satisfactory, but even here much benefit may sometimes result. The best method of treatment here is to pass several long narrow test tubes in several directions around the mass, doing an exploratory laparotomy for the pur-

pose. The tubes can be anchored in this position and the radium administered through them. Their later removal is a simple matter.

In inoperable carcinoma of the uterus, radium finds a valuable field of usefulness and the results here are often most marked, keeping these unfortunates alive and comfortable for months, when their lives seemed to be but a matter of weeks, in some cases prolonging their existence a year or more and often bringing the growth within the limits of a radical operation. In these cases as well as elsewhere a marked effect of its use is the relief of pain.

When we pass from the malignant inoperable conditions of the uterus, which strive as we may to delay or postpone the fatal issue have in the end but one termination, and take up the more promising non-malignant conditions, fibroids and metrorrhagia, the result of chronic hyperplasia or fibrosis, here I believe we have a real boon, and are thoroughly justified in using the term "cure," for I believe that the results obtained by radium challenge the results of any other method of treatment, not excepting hysterectomy. I am free to state that I am yet to see a case of uterine hemorrhage from these causes that cannot be permanently relieved by radium. Fibroids, except subperitoneal, which are not influenced, entirely disappear under its use. Of these cases I have now had quite a number. Two, very severe, presented a mass as large as a six months' pregnancy, reaching almost to the umbilicus. Both cases were practically bleeding to death, neither have menstruated since the radium was used and both are now apparently well. One of these histories will suffice, as they were almost identical.

Mrs. S., age 42, referred by Dr. Gillaspie. Metrorrhagia for one year. Presented a mass extending almost to the umbilicus. Suffering continual pain in pelvis, extremely anemic, pulse 140, respirations rapid, constant nausea and vomiting apparently the result of the acute anemia from hemorrhage.

Red blood cells 3,000,000, hemoglobin 50%. Ergot and other drugs completely failed to afford any relief. Removed to Touro in ambulance. The foot of the bed was elevated two feet to keep enough blood in the vital centers and to relieve the pelvic congestion. Two applications of 50 mg. of radium were made for twelve hours each, with a marked immediate relief of hemorrhage.

Nausea and vomiting ceased and pain was entirely relieved. She returned home in the ambulance. There was a slight bloody dis-

charge for a week following. Two similar applications were made during the following month. Three months ago when I last examined the case, the uterus was the size of a lemon, about normal; she has not menstruated since, has regained her health and strength and is apparently perfectly well. A recent communication from the husband states that this condition continues.

I could cite other cases, but they would be but a duplication of the above. Whether the case be one of fibroids or chronic metrorrhagia from other causes, they yield equally as well to radium. It is expected in such cases, when due to fibroids and where the tumors have not entirely disappeared, that an additional one or two treatments may be necessary six months or one year later.

Another field of usefulness for radium, which, as far as I know, has not been reported on by others, and which, therefore, is in the nature of an experiment, is its use in severe cases of dysmenorrhea where the patient frequently has to go to bed for several days during the period and suffers more or less between times, whether from uterine colic or neuralgic pains in the ovaries or other pelvic parts. In these cases moderate intrauterine applications of radium at monthly intervals for several applications decidedly lessens the uterine flow and controls the pains, its effects often lasting for many months. Sufficient time has not elapsed to show what permanent benefit can be accomplished in these cases, but so far the results have been very favorable. The idea here is to lessen, not stop the menstrual function. If pushed further, complete cessation of the menses will occur with ovarian atrophy and sterilization, the same as occurs in cases of fibroids, and it has been my observation so far that the menopause induced in this way is much less trying than when induced by surgical means. There is, however, much to say on this subject, which time will not permit on this occasion.

I have used radium in a variety of other cases and frequently with gratifying success and would like to report one more case.

Miss C., age 40, poorly nourished and badly neurotic. Has suffered from pain in the right lumbar region for many years. The pain has a definite location, midway between the umbilicus and ant sup. spine of ilium and is often severe enough to confine her to bed. Eight years ago had her appendix removed, and abdomen explored by a distinguished surgeon of this city. No relief resulted. About one year later she came to me. As there seemed to be some connection between the menstrual periods and the pain I took out

her right ovary, and suspended her uterus; no relief resulted and the patient became very much discouraged. In my efforts to relieve her I tried everything; deep novocain injections at the points of exit of the lower dorsal and upper lumbar nerves often controlled the pain for two or three weeks following. This treatment was continued for about two years, but as we could not continue it indefinitely something else had to be done. I accordingly made a dissection of the region at the point of pain, as it was uncertain exactly which nerve was involved, otherwise I could have more easily sectioned the nerve higher up; several nerve branches were divided and avulsed. No relief followed. I finally applied radium over the point of pain, making two applications of 50 mg. for twelve hours each. It is now several months since these applications and there has been no recurrence of pain. The duration of this relief and ultimate outcome of the case, time must decide.

It is known that radium cures or relieves neuralgia, but its exact indications and limitations for its use have not been worked out. The use of radium is still in its infancy and time and experience alone can assign it its proper place among our therapeutic agents. For my own part, I recognize in it an asset of real value, and would be loath to part with it.

EXTRACTION OF EXPLORING NEEDLE BROKEN IN ATTEMPTING TO DO A SPINAL PUNCTURE FOR DIAGNOSTIC PURPOSES. CASE REPORT.

By LUCIAN H. LANDRY, M. D., F. A. C. S.,
New Orleans, La.

The question of foreign bodies in the vertebral canal seems to be one rarely dealt with, or I should say, one not frequently reported.

When we consider the number of spinal punctures that have been performed universally for the past fifteen years, it is surprising that so few cases of accidental breaking of the needle have been reported, as happened in the case I am now reporting.

W. J., 38 years old, carpenter by occupation. On July 29, 1915, had a spinal puncture done for diagnostic purposes. No local anesthetic was used at the time, according to the patient's statement. He also states that he made no sudden motion or extension

*Read before the Orleans Parish Medical Society, October 11, 1915. [Received for Publication November 6, 1915.—**Eds.**]

at the time, nevertheless the spinal needle was broken in the attempt to tap the canal.

He was admitted to Dr. Matas' service at the Touro Infirmary for observation, the first four days being spent entirely in bed.

He complained of severe headache continually, which was aggravated on trying to rise. Five days after the accident he was started on hypodermics of cacodylate of soda for his systemic disease. The injection was given in the buttock. The next morning he complained of severe pain in the small of the back (in the region where the spinal needle was introduced), radiating down the thighs. Directly after this he noticed pain on flexion of the spinal column, so much so, that on attempting to resume his work 15 days after the accident, he was forced to quit after putting in two hours time.

On August 17, 1915, nineteen days after the accident, he was readmitted to the Infirmary on account of extreme pain in the small of the back, radiating down the thighs, on walking or rising from a sitting posture or any motion.

X-ray pictures were made on three separate occasions, and the piece of needle located. The last exposure on September 16 being a stereopticon study by Dr. Samuel, who advised us that the needle was in the spinal canal.

On September 17, 1915, under ether anesthesia, an incision was made over the 3rd, 4th and 5th lumbar vertebræ. The muscles were separated from the spinous processes on both sides and the laminæ clearly exposed; but it was not until the spinous processes of the 3rd, 4th and 5th lumbar vertebræ were removed by a Hudson rongeur that the needle was discovered between the 3rd and 4th vertebræ.

On extracting the needle some cerebro-spinal fluid was seen to escape into the wound. The wound was closed without drainage and healed very kindly. Patient sat up in bed on the 4th day after the operation—the next day was up in a rolling chair and was allowed to walk a week after the extraction of the needle.

The question might be asked whether the needle was the cause of all the trouble the patient claims he had. He strikes one as being a very impressionable individual, and the mere fact of his knowing that the needle was in his back is almost sufficient to cause a great deal of disturbance.

On the other hand, when we consider an inch and a quarter needle in the back, with one end inside the spinal canal, it is very easy to believe that motion will cause pain in the region at least, if not in the course of distribution of the large nerve trunks of the lower extremeties.

For the combined reasons above mentioned, an exploration was decided upon. It was with considerable misgiving that the

search was made, as we all know the difficulties accompanying a needle hunt. I was very fortunate in having the assistance of Dr. Gessner, who lent his moral support, to say nothing of his technical skill. Fortunately, after a diligent search for a half hour, our labor was rewarded by the recovery of the needle.

The patient was discharged on September 27, apparently perfectly well and complaining of no pain or discomfort.

The features that I wish to emphasize by this report are:

1st. No spinal puncture should be performed without first anesthetizing the tract of the needle with novocain or some other suitable solution. It is surprising that this accident is not more frequent than it is, when we consider the bony region involved.

2nd. Patient should be warned not to straighten up or move until told to do so.

3rd. Incision of the skin is advisable, to obviate punching out a piece of skin, thereby blocking the needle, and to prevent carrying in possible infection from the skin.

4th. Care should be exercised in the choice of the needle. Don't use an old rusty needle or one with too sharp or long cutting point. A platinum needle is to be preferred, as it will allow more bending and twisting without breaking than a steel needle.

PROCEEDINGS OF SURGICAL SECTION OF SOUTHERN MEDICAL ASSOCIATION AT DALLAS, TEXAS, NOVEMBER 9-10-11.

(Reported by ISIDORE COHN, M. D., New Orleans)

The address of the chairman dealt with the function of the periosteum, the repair of fractures and the fate of bone transplants. It was shown that the periosteum acted as a limiting membrane, a source of blood supply and a protection against infection but in no way did it manifest an osteogenetic function.

Fractures were shown to have healed in the absence of periosteum, as well as trephine openings healed in the absence of periosteum. The callus always presents cartilage as an element of its composition. The sources of callus formation are the endosteum and the cell layer of osteoblasts directly on the surface of the bone.

Transplants were shown to have stimulated osteogenesis, but they manifested no active bone-forming power. In fact, they all seem to die and after a time become revascularized by the growth from the recipient bone.

Appendicitis, particularly the neglected cases, came in for a great deal of discussion. Dr. Southgate Leigh advocated operation, and drainage, and subsequent right lateral position for the patient. Dr. Leigh laid special stress on the futility of so-called gauze drains.

Dr. Crisler, of Memphis, in discussing the subject called attention to the free use of iodin, 2½% in alcohol 95%. As much as a quart of this solution is poured directly into the cavity. He maintains that the solution has a germicidal action. Dr. Bu Bose, of Selma, Alabama, was especially emphatic in his denial of the value of antiseptics, maintaining that it is impossible to expect sterilization of the cavity by antiseptics. In his paper, Du Bose brought out a form of incision which should prove useful. He used a transverse skin incision midway between the umbilicus and the anterior superior spine of the ileum and when necessary he enlarges the incision by making a vertical incision downward near the median line, thus allowing one to reflect downward a flap, and thereby giving a full exposure of the right iliac fossa.

Dr. Maes, of New Orleans, called attention to the futility of attempting to drain the abdominal cavity, and maintained that one should attack the seat of trouble, the lumen of the gut which is the source of toxic material. The use of the Pezzer catheter in the lumen of the gut and free use of pituitrin were the main measures advocated by Maes.

The subject of ulcer of the stomach was discussed by Drs. Rodman and Blesh.

Dr. Rodman concludes that since ulcer of the stomach is so frequently followed by a carcinoma, and since in his own experience he has never cured a case of carcinoma of the stomach that all ulcers should be excised. Pylorectomy is the preferred operation according to Dr. Rodman. He is of the opinion that simple posterior gastro-enterostomy without excision of the ulcer with knife or cautery will not suffice.

"Post Hospital Care of the Patient" was discussed by Dr. Stuart McGuire, of Richmond. His paper was gratefully received by most of those present, as it contained many helpful sug-

gestions about a generally neglected subject. Emphasis was laid on the necessity of telling the patient that even though pathology has been removed they are not entirely well, and that they must therefore pay attention to diet, exercise, and habits of life in general. In order to facilitate his work, Dr. McGuire has had printed forms made for use in his own work.

Cancer of the mouth and tongue was discussed by Dr. Shelton Horsley. The importance of block dissections in the neck was emphasized. The Percy cautery has been used by Horsley for the removal of the mass. Dr. Thompson, of Galveston, in discussing this subject advocated the dissection of all glands in both sides of the neck because of the free communication between the lymphatics on either side of the tongue. His lantern slides illustrating this point were of great interest.

The value of radium in checking uterine bleeding was brought out by Dr. C. J. Miller.

Dr. Griffith, of Asheville, in discussing "The Sterile Woman," called attention to the importance of examining the husband before subjecting the wife to operations.

Dr. L. H. Landry reported some interesting operative results following the traumatic rupture of the middle meningeal artery.

Dr. E. S. Hatch read a paper on the value of the Abbot method of treating scoliosis, and Dr. Campbell, of Memphis, gave a moving picture demonstration of some results showing value of "sun" treatment of tuberculosis of hip and vertebræ. He has had better results by fixation in cast and exposure to light than by use of Abbott Method.

Transfusion methods were discussed by Drs. Carter and Singleton, of Galveston; Drs. L. H. Landry, Horsley, Thompson and others.

Drs. Carter and Singleton advocate the use of a .2% solution of citrate of soda. Landry demonstrated the Unger apparatus, and Dr. Horsley advocated the suture method. The Unger method seems the simplest in the average hand.

Correspondence

A PLEA FOR THE MORE GENERAL USE OF THE MICROSCOPE BY THE COUNTRY PHYSICIAN.

COVINGTON, October 7, 1915.

EDITORS NEW ORLEANS MEDICAL AND SURGICAL JOURNAL:

GENTLEMEN—Having been for the past seventeen years one of the common herd of country practitioners, experiencing the many vicissitudes of rural practise, I am obliged to raise my voice in protest at the apparent lethargy of a majority of country doctors in the non-use of the microscope as an aid to diagnosis.

After being instructed in the elementary principles of bacteriology at a medical college, few of us equip ourselves for microscopic work, when we enter practice, and soon begin to depend upon state board of health laboratories, where we forward specimens for examination. Many claim that the busy country practitioner, whose time is so completely engrossed in long-distance visits, cannot find a moment to devote to this work. In rare instances this may be true, but in the writer's humble opinion it would be more satisfactory to both physician and patient if fewer cases were under observation, and these patients intelligently treated, than a great number, who necessarily receive superficial and inadequate attention.

To obtain a fee for such unscientific services is manifestly unfair.

In this age of progress the average layman who reads has acquired some knowledge of the symptoms of the commoner diseases which he frequently brings into play, often to the embarrassment of the physician, because the latter does not make use of every available means of diagnosis in cases presenting obscure symptoms.

Among our "preferred" city brethren diagnoses made by a country practitioner are often discredited because these gentlemen, who have access to the best laboratories, depend upon them as allies in the correct interpretation of clinical symptoms, while we "Doctors of the Styx" are content to treat disease on the "shotgun" plan.

Malaria, that protean disease, should never be guessed at by the doctor and no dose of quinin given until a blood examination is made to ascertain definitely what parasite we are dealing with. Tuberculosis, our greatest plague, is only positively diagnosed when bacilli are found, hookworm ova are only known to exist when revealed by the microscope, and many infections are brought to light only when the suspected secretions are placed upon the stage of this wonderful instrument.

Every country physician should take up a course in clinical microscopy, if practicable. Those who are prevented for any reason, should adopt the alternative recently inaugurated by the St. Tammany Parish Medical Society: that is, to have an expert in this line of work attend regular monthly meetings and give practical demonstrations to every member present. The technic as to the preparation of specimens, staining, mounting, etc., is easily acquired, and with a little practice one soon becomes proficient.

This course, which is an essential part of every post-graduate curriculum, brings "Mahommet to the mount," and while the scope of these monthly instructions is necessarily limited, they must serve as an incentive for country physicians to equip themselves for this class of work that is absolutely required for the scientific management of cases. Very respectfully,

J. F. Buquoi, M. D.,
Pres. St. Tammany Parish Med. Society.

N. O. Medical and Surgical Journal

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THE SOUTHERN MEDICAL ASSOCIATION AT DALLAS.

The ninth annual meeting of the Southern Medical Association was an undoubted and unprecedented success, with nearly 1,100 registered members in attendance, and probably half as many more physicians at the various sessions. All of the section work was of high standard and the efficiency of the organization was demonstrated throughout. The mass of scientific material presented does not admit of any complete review, but in the Public Health Section alone a large amount of ground was covered.

The meeting was notable, not only in that six or seven living past presidents of the Association were in attendance, but more

than all, in that President W. L. Rodman and President-elect Rupert Blue, of the American Medical Association, were both present throughout the meeting.

President Rodman was a feature at each of the public functions, especially bringing a message to the Association regarding the National Board of Medical Examiners, which was subsequently endorsed by the unanimous vote of the Association. Gen. Blue, of the Public Health Service, and Col. M. W. Ireland, of the Army, representing Gen. Gorgas, took the occasion to talk upon "preparedness" as relating to the medical profession.

The incidental effect of these addresses resulted in the adoption of resolutions memorializing Congress and the President of the United States to increase the Medical Corps of both the Army and of the Public Health Service and a renewed reminder to the President that the Baltimore Democratic platform had carried a plank for a National Health Department.

The profession of Dallas was lavishly hospitable and the banquet at the Scottish Rite Cathedral was a magnificent occasion, admirably conducted in every particular.

Dr. E. H. Carey, as the general chairman, was efficient in every way, even in the task of toastmaster, eliciting many surprises among the unexpecting speakers.

The Association selected Atlanta as the next meeting place in 1916, with the following officers: President, Dr. Robert O. Wilson, of Charleston, South Carolina; First Vice-President, Dr. Holman Taylor, of Fort Worth, Texas; Second Vice-President, Dr. Guy Hunner, of Baltimore, Maryland. Dr. Seale Harris, Secretary-Treasurer, holds over for another year.

Among the particular matters of interest at the meeting was perhaps the taking over of the *Journal* of the Association, placing its future control in the hands of the Trustees, without sacrificing the interests of the present owners.

A long discussion took place upon the subject of pellagra on the afternoon of the last day and it would be hard to conclude that the Goldberger theories had been accepted. Open skepticism was expressed by some and others were willing to be convinced, but had not yet been converted.

Among the new section officers there were elected from the Public Health Section Dr. W. S. Leathers, of Mississippi, Chairman; Dr. R. H. von Ezdorf, U. S. P. H. S., Vice-Chairman; Dr.

R. D. McBrayer, Secretary. In the Medical Section, Chairman, Dr. K. H. Beall, Texas; Vice-Chairman, Dr. F. C. Moore, Florida; Secretary, Dr. Thompson Frazer, North Carolina. In the Surgical Section, Chairman, Dr. J. H. Blackburn, Kentucky; Vice-Chairman, Dr. F. Webb Griffith, North Carolina; Secretary, Dr. Lucian H. Landry, New Orleans.

The Railway Surgeons' Association met on Monday, November 8, electing Dr. Southgate Leigh, of Virginia, President, with Dr. R. W. Knox, of Texas, Vice-President, and Dr. Ambrose McCoy, of Tennessee, Secretary.

THE CHARITY HOSPITAL CLIENTELE

It is gratifying to learn that the attorney general's office has ruled that the accommodations and services of the Charity Hospital are intended for those who are not able to pay for medical attention or to take care of themselves or be taken care of otherwise.

According to this ruling, the hospital should be a charity in fact as well as in name, and its board of administrators should take the steps necessary to restrict the benefits of the institution to those who are in reality deserving of them.

Those who will chiefly profit, if such a policy is properly enforced, are the ones who are poor and in need of medical or surgical attention, some of whom are now turned away or whose stay is shortened on account of insufficient space, because many who ought to take care of themselves are occupying the place of some truly deserving ones. There is a limit not only to the space and the financial means of the institution, but also to the aggregate time which the medical staff can give to the patients, hence all that the undeserving obtain is virtually taken away unfairly from the worthy.

It stands to reason that any restrictive rules must be framed with great care and that the benefit of the doubt must be given to the applicant; also that emergency cases must be handled with liberality as well as kindness, but it will not be difficult to weed out many who are now imposing on the State, which means stealing from the poor.

Many will recall that an attempt was made several years ago to prevent imposition on the various medical charities of the city. The movement was inaugurated by the Orleans Parish Medical

Society, and all the hospitals and free clinics of the city were willing to adopt some working agreement to prevent abuse, except the Charity Hospital, whose officers were not convinced that they possessed the authority necessary to enforce the restrictions recommended.

Now that the legal advisory head of the administration has declared that the board of the Hospital has the power to discriminate and regulate, the effort should be renewed to have all the charitable institutions and clinics adopt and enforce standardized rules to prevent abuse and imposition on the part of those who are able to pay their way.

In this way the hospitals will be relieved of a burden which it is unfair to make them carry and the change will redound to the benefit of those who really need help. Certainly all of the members of the medical profession of New Orleans who give of their time and brain and labor to the inmates of free hospitals and the visitors to free clinics will do so all the more cheerfully and unstintingly if they can feel that unfair advantage of them is not being taken.

Miscellany

Intensive Iodin-Therapy in Pulmonary Tuberculosis.—Dr. Louis Boudreaux (in *Journal de Medecine de Bordeaux*, January, 1914; *La Policlinica*, Valencia, Spain) says that his method of treating pulmonary tuberculosis with intensive doses of iodin is very simple, but that it must be persevered in. It is based on two points: First, iodin is the direct, specific and heroic remedy in tuberculosis; second, the iodin should be administered to tubercular subjects in small doses at first, to be gradually increased until the limits of tolerance are reached.

The treatment should not be suspended until it can no longer be doubted that the limit of tolerance has been reached, and then it is seen what stupendous doses can be given without inconvenience. In ten years of experimentation of intensive iodin treatment, intolerance has appeared very rarely, since so-called iodism seldom occurs, and should be distinguished from *iodidism*, due to the rash use of the iodids, especially potassium iodid.

The tincture of iodin is the most available preparation. Dr. Boudreaux commences with doses of twenty drops daily, soon

increased to 30, 40 or 100 drops. In one case, as much as 350 drops were given daily, and this lasted for months and months. The daily allowance of iodin with any kind of beverage is well diluted, and divided into numerous doses.

One artisan, with tuberculosis in the cachectic stage, was perfectly cured after two years of treatment. He worked up to 100 drops a day.

Another young man. in the third stage, took from 180 to 200 drops a day, and now enjoys robust health.

A laborer, 21 years old, escaped from a well-marked double pulmonary and laryngeal tuberculosis, thanks to 350 drops of the tincture daily, continued for six months.

Children bear large doses well, even as high as 60 drops a day, and they respond marvelously. McSHANE.

NOTE ON TETANUS.—Dr. Le Monnier reports (*Jour. Méd. et Chir. Prat.*, 25, July, 1915) his experience with tetanus in French military hospitals. He gives a detailed account of one case, which serves as a model for six cases, four of which recovered.

A soldier was seriously wounded in the right parietal region on May 1, 1915. On the ambulance, a diagnosis of fracture of the skull was made. He had not had any injection of antitetanic serum. On May 16, there was some stiffness in the jaws; on May 19, on entering Dr. Le Monnier's service, the patient had opisthotonos, and stiffness in the legs, which gave him a peculiar and almost impossible walk. The convulsive crises were strong and frequent. On the evening of the 19th, he received an injection of antitetanic serum, and a further subcutaneous injection of ten c. c. of a five per cent. solution of persulphate of sodium morning and night; every two hours, a tablespoonful of syrup of chloral in milk, making 12 grains in 24 hours. On May 20, twenty c. c. of cerebro-spinal were withdrawn from the spinal canal, which were replaced by an equal volume of antitetanic serum, the patient keeping a reclining posture for two hours. The persulphate of soda and the chloral were kept up. The persulphate solution was made fresh every day.

There was little improvement on the 23d. On that day, he tried to perform a lumbar puncture, but the needle was blocked by a small clot; the serum was injected subcutaneously on that occasion.

The patient was improved. The indications for the employ-

ment of the persulphate not extending over six days, one grain of carbolic acid in a two per cent. solution was given in five doses in 24 hours. In two days and a half, the convulsions became more frequent and more violent. Le Monnier gave another injection of 20 c. c. of antitetanic serum, kept up the chloral, and returned to the persulphate of soda. On May 30, although the patient was much better, 20 c. c. of serum were injected into the spinal cord. On May 31, there was no more stiffness, and only a few grimaces when the injections were made. On June 3, the patient was discharged cured. The chloral was continued in diminishing doses. The patient sometimes complained of diplopia. The temperature went above normal only once, and then it went to 38° Cent., which was ascribed to gastric disturbance.

Le Monnier believes firmly in the trio of medicines: serum, persulphate of sodium and chloral. In a fulminating case, he would not hesitate to give the chloral intravenously.

McSHANE.

SPARTEIN SULPHATE.—After using this drug in 305 recorded cases, Earp (S. E., in *Nevada Medicine*) concludes that the dose usually given is too small, one grain three times a day being suggested. A variety of cardiac cases is referred to; some in which digitalis had failed. Spartein seems to act as a heart tonic, without untoward effects; more heart force and less frequency is evident after spartein has been used. It favors heart nutrition and the increase of heart tone. By dilating the arterial capillaries, it reduces the resistance against which the heart is called upon to propel the blood. It has the advantage of acting quickly. Earp is emphatic in his praise of the drug and thinks it deserves more extended use; he claims to have proven its value in cardio-renal cases. D.

Medical News Items

THE CENTRAL STATES PEDIATRIC SOCIETY organized in Chicago on October 12 and elected the following officers: President, Dr. Borden S. Veeder, St. Louis; vice-president, Dr. Olin W. Rowe, Duluth, Minn., and secretary-treasurer, Dr. Clifford G. Grulee, Chicago. The next meeting will be held in St. Louis.

The National Association of Industrial Accident Boards and Commissions held a convention in Seattle September 30 to October 2, and advocated quicker and more adequate medical treatment for injured workmen. According to Dr. Raphæl Lewy, of New York City, out of 6,000 cases of injury examined by him in the past year 18½ per cent. had developed infection as the result of lack of timely and expert treatment.

The American Association of Railway Surgeons held its annual meeting in Chicago, October 12-15. The following officers were elected: President, Dr. Frank T. Fort, Louisville, Ky.; vice-presidents, Drs. John M. Dodd, Ashland, Wis.; Edward H. Griswold, Peru, Ind., and Charles P. Frantz, Burlington, Iowa: treasurer, Dr. Henry B. Jennings, Council Bluffs, Iowa.

The Medical Association of the Southwest held its tenth annual meeting in Oklahoma City, October 11-13, under the presidency of Dr. Jefferson D. Griffith, Kansas City, Mo. The following officers were elected: President, Dr. Joseph D. Becton, Greenville, Texas; vice-president, Dr. Edward H. Martin, Hot Springs, Ark.; secretary-treasurer, Dr. Fred H. Clark, El Reno, Okla. (re-elected). Fort Smith, Arkansas, was selected as the meeting place for 1916.

The Mississippi Valley Medical Association held its forty-first annual meeting in Lexington, Ky., October 19-21, under the presidency of Dr. Hugh Cabot, Boston. The following officers were elected: President, Dr. Willard J. Stone, Toledo, Ohio; vice-presidents, Drs. Channing W. Barrett, Chicago, and Carl Lewis Wheeler, Lexington, Ky.; secretary, Dr. Henry Enos Tuley, Louisville, Ky. (re-elected); treasurer, Dr. Samuel C. Stanton, Chicago (re-elected). Indianapolis was selected as the next meeting place.

The Safety First Federation of America met in convention in Detroit, October 19-20. The keynote of the meeting was the conservation of life, limb, health and property. In order to obtain this conservation, the recommendations of the association are: the enactment of laws prohibiting the sale of dangerous weapons and explosives; the supply of free antitetanus serum by state and municipal authorities to be so placed that it can be conveniently and quickly obtained; the prohibition of the sale of firearms; the prohibition of common drinking cups and roller towels, and of spitting in public places and on sidewalks; the estab-

lishment of public baths in cities and the medical and dental inspection of school children.

The United States Civil Service Commission announces an open competitive examination, for men only, for the position as assistant in metabolism investigations, on December 8, 1915. The salary is $1,500 a year. The duties of the position will be to make complete food analyses, including calometric determintion of the energy metabolism. The examination will include the subjects of general chemistry, calometric and respiration determinations and education and experience. Competitors must have graduated from a four years' course at a college, university, or medical school of recognized standing and at least six months' practical experience in work with the respiration apparatus and the calometer. Only those who have reached their forty-fifth birthday on the day of the examination will be considered. Applicants must submit to the examiner on the day of the examination their photographs, taken within two years. Tintypes or proofs will not be accepted. Those who desire this examination should at once apply for **Form 1312, stating the title** of the examination for which the form is desired, to the United States Civil Service Commission, Washington, D. C., or to the Secretary of the United States Civil Service Board, at the various cities in each State in which they are located.

Leo N. Levi Memorial Hospital.—The first anniversary of the opening of Leo N. Levi Memorial Hospital was celebrated November 7, 1915, at the Hospital in Hot Springs, Arkansas. The year's existence of the Hospital has been marked with great success.

Memorial to Dr. Austin Flint.—At a meeting of the faculty of the Cornell University Medical College on October 15, 1915, a memorial to Dr. Austin Flint, M. D., LL.D., Professor Emeritus in the Cornell University Medical College, who died in the eightieth year of his age, was read and adopted. Dr. Flint was one of the greatest teachers of the old school of American medicine and was the first in this country to expound the doctrines of the French school of physiology which in his early life was at the height of its renown. He was the fifth generation of noted physicians, the name Austin being carried down to Dr. Flint's surviving son.

Red Cross Christmas Seals.—The National Association for

the Study and Prevention of Tuberculosis has printed and distributed 200,000,000 Red Cross Christmas seals. The proceeds of the sale of these seals will go for the fight against tuberculosis in the communities where the seals are sold. The New York State Charities Aid Association expects to sell 10,000,000 of the number printed, which will be more than a million and a half over the sale of last year.

The Southern States Association of Railway Surgeons, which held its annual meeting in Dallas, November 8-9, elected the following officers for the ensuing year: President, Southgate Leigh, Norfolk, Va.; vice-president, R. W. Knox, Houston, Tex.; secretary, Ambrose McCoy, Jackson, Tenn. Dr. Thomas H. Hancock was authorized to appoint a committee to work with congressmen and United States senators in an effort to amend the Federal laws permitting railway surgeons to ride on passes the same as other railroad employees.

Money to Kill Mosquitos.—The State Board of Health of New York City held a public hearing of the Public Health Council early in November, which is considering methods of ridding the city of mosquitos. It was estimated that it would cost New York City $385,000 to kill off the pests within her boundaries, this estimate being based on the drainage of all swamp lands in the city's area, of which there are 385,000 acres.

Pellagra Conference Meets.—The National Association for the Study of Pellagra held its third triennial conference in Columbia, S. C., October 21 and 22, and elected the following officers: President, Capt. Jos. F. Siler, M. C., U. S. Army; vice-presidents, P. A. Surg, R. M. Grimm, U. S. P. H. S., and Henry W Rice, Columbia, S. C.; secretary, Dr. James W. Babcock, Columbia, S. C., and treasurer, Dr. James A. Hayne, Columbia, S. C.

Mothers Get Pay for Children.—A law providing that every time a mother gives birth to a child the province shall pay her $25 has recently been adopted in Saskatchewan, Canada. The Government also pays a fee of $15 to the medical attendant.

Psychology for New York City Police.—A course of instruction in psychology to the police of New York City was begun on October 30. Dr. Louis E. Bisch, with Professor Thorndyke, of Columbia University, is giving the instruction. It is thought that the lectures will enable officers on duty to recog-

nize mental and moral defectives and report them to a hospital or sanatorium instead of to a penal institution.

Relief Fund for the Belgian Profession.—The report of the treasurer, Dr. F. F. Simpson, of the committee of the American physicians for the aid of the Belgian profession, shows, for the week ending November 6, 1915, a total disbursement of $7,310.04 and a balance on hand of $561.80. The total receipts are $7,871.84.

Journal of Cutaneous Diseases.—Beginning with the January, 1916, number, *The Journal of Cutaneous Diseases,* including syphilis, will be published for the American Dermatological Association by W. M. Leonard, Boston. Each number will contain 80 pages and as far as possible be of interest and value to the general practitioner as well as to the dermatologist. Drs. Geo. M. McKee and Fred Wise, of New York City, are editor and associate editor of the journal.

Alvarenga Prize.—The next award of the Alvarenga prize of $250 will be made on July 14, 1916. Essays intended for competition may be made on any subject in medicine, but cannot have been published. They must be typewritten, in English, and must be received by the Secretary of the College of Physicians in Philadelphia on or before May, 1916. No signature is to accompany the essay, but it must be plainly marked with a motto. A sealed envelope having on its outside the motto of the paper and within the name and address of the author must be sent with the essay. The Alvarenga prize for 1915 was awarded to Dr. J. E. Sweet, Philadelphia, for his essay entitled "The Surgery of the Pancreas."

Natchitoches Medicos Meet.—The Eighth District Medical Association met in Natchitoches, La., on October 28, with twenty physicians in attendance. A program of interest to the profession and a banquet at the close of the meeting was enjoyed.

Leprosy in the United States.—Dr. William A. Pusey, of Chicago, in an address before the Chicago Medical Society, October 27, is quoted as saying there are 500 cases of leprosy in the United States, 275 of which were in Louisiana, 100 in New York City, 50 on the Mexican frontier and 5 in Chicago. Dr. Pusey advocates the establishment of a general leprosarium.

American Physicians Honored.—According to report,

Crown Prince Alexander of Serbia has decorated forty-three American physicians and sanitary engineers representing the Rockefeller Foundation and the American Red Cross, in recognition of their services in checking the typhus epidemic in Serbia.

Vienna Physician Gets Nobel Prize.—Dr. Robert Barany, of the University of Vienna, has been awarded the Nobel prize for 1915, in recognition of his work on the physiology and pathology of the ear.

Wood Alcohol Fatal.—According to a telegram from Berlin, October 18, 100 workmen in shipping wood alcohol from a port in Russia, opened a barrel and drank from it. Twenty are dead and the remainder seriously ill.

Hospital for Drug Victims Closed.—The Atlanta City Hospital for Drug Victims closed on November 1, it is announced. One hundred and fifty victims, who were treated during the existence of the institution, were dismissed and pronounced cured.

Ether Day.—The Massachusetts General Hospital celebrated the sixty-ninth anniversary of Ether Day on October 16. An address on "The Dangers of Anesthesia" was delivered by Dr. William Williams Keen, Philadelphia. During the day demonstrations were carried out at the hospital.

Lip-Reading Clinic Opened.—On October 12, under the instruction of Dr. G. Hudson Makuen, the first lip-reading clinic was held at the Polyclinic Hospital, Philadelphia. Clinics will be held every Tuesday, Thursday and Saturday, from 2 to 3 o'clock.

Vaccination Law Upheld.—The supreme court of Texas, after two years of litigation, has upheld the right of school boards to compel the vaccination of children before they will be allowed to enter the public schools.

The Clinical Congress of Surgeons of North America, which held its sixth annual meeting in Boston the latter part of October, elected the following officers: President, Dr. Fred B. Lund, Boston; vice-presidents, Drs. Jasepr Halpenny, Winnipeg, Canada, and Dr. S. M. D. Clark, New Orleans; secretary (re-elected), Dr. Franklin H. Martin, Chicago; treasurer (re-elected), Dr. A. B. Kavanel, Chicago. Mr. A. D. Ballou was re-elected general manager. The Congress will be held in Philadelphia next year.

Walking on Railroad Tracks.—The New York and New Haven Railroad has recently issued a bulletin in which it has stated that during the past year 5,471 persons in this country were killed while walking on railroad tracks, or for every day in the year there were 15 persons who lost their lives through this form of carelessness or recklessness.

Medical Deserters.—*The Boston Medical Journal* says:

"Among the nine German naval officers on the Prince Eitel Friedrich and the Kronprinz Wilhelm, interned at Norfolk, who broke their parole, we regret to say that there were two medical men, Drs. Koch and Kronecker. We had hoped the medical profession at least would have come out of this war without dishonor."

Applicants for Navy Unfit.—Six hundred applicants were examined recently in Boston for the United States Navy and only thirty were accepted. The remainder were rejected as physically below the normal or mentally or morally unfitted. Rear Admiral Ross, U. S. N., deduces from this that we must make our rapidly degenerating citizenry into men before we can make sailors or soldiers.

Sterilization Enforced in Wisconsin.—It is reported that the Wisconsin sterilization law of the Legislature of 1913 will be put into actual operation very soon. Twenty-four inmates of the home for feeble-minded in Chippewa Falls will be submitted to surgical treatment for this purpose.

Anti-Treating Law Proves Effective in England.—The Coroner of Southwark, at an inquest recently, stated that the anti-treating order in England had done more to stop drunkenness than anything else in his experience that the Government had done.

Boards Convened.—Boards of commissioned medical officers recently convened at the U. S. Bureau of Public Health for the following purposes: To prepare questions for the mental examination of Surgeon Paul M. Carrington, to determine his fitness for promotion to the grade of Senior Surgeon; for the physical examination of officers of the U. S. Coast Guard for promotion. Boards convened at the Marine Hospital, Portland, Maine, and San Francisco, Cal., to conduct the physical and mental examination of Pharmacist C. H. Bierman, for promotion.

Universities Remembered.—By the wills of philanthropic persons, the following universities have recently been left large

sums of money: Johns Hopkins University, $37,500; Kansas University School of Medicine, Lawrence, $30,000; Columbia University for the Sloane Hospital for Women, New York, $50,000, and Columbia University, the residuary of an estate estimated at several million.

The Revue de Medecine, of Paris, which suspended publication in August, 1914, has announced its resumption. It will deal largely with war medicine and surgery without neglecting topics of general interest. Until the end of 1915 back numbers in sets of two will be sent to those entitled to them and the regular issues will be resumed in 1916.

The American Society for the Study of Alcohol and other Narcotics will hold its forty-fifth annual meeting in Washington, D. C., December 15 and 16, 1915. Papers on different phases of the subject will be presented by specialists and distinguished medical and scientific men, and will be confined exclusively to the conclusions from laboratory observations and clinical experience. This was the first society of medical men in the world to take up the scientific side of the question of alcohol and other narcotics. The headquarters of the meeting will be at Hotel Raleigh and the public is cordially invited to be present. For further information, address the Secretary, Dr. T. D. Crothers, Hartford, Conn.

Rest Cottage, a hospital for purely nervous patients, has recently been opened by the management of the Cincinnati Sanitarium. It contains twelve rooms for patients, is homelike and attractive, with modern equipment and appliances, and situated in an ideal location convenient to Cincinnati and its charming environs.

Personals.—Dr. Edward C. Register, editor of the *Charlotte Medical Journal*, was elected president of the American Medical Editors' Association at the meeting in New York at the end of October.

Surgeon George W. McCoy was appointed director of the hygienic laboratory at Washington, succeeding Dr. John F. Anderson, who resigned to accept private employment. Dr. McCoy is now in charge of the leprosy investigation at Molokai, Hawaii.

Over fifteen hundred American surgeons attended the sixth annual convention of the Clinical Congress of Surgeons of North America held in Boston the latter part of October.

Among those of the New Orleans medical profession who attended the meeting of the Southern Medical Association in Dallas, November 8-11, were: Drs. J. B. Elliott, Jr., J. T. Halsey, M. Feingold, C. Jeff. Miller, Isadore Dyer, L. R. DeBuys, I. I. Lemann, J. D. Weis, I. Cohn, U. Maes, L. H. Landry, J. B. Guthrie, D. P. West, Elizabeth Bass, H. Dupuy, J. W. Durel, W. M. Perkins, E. D. Martin, O. Dowling, J. A. Danna, M. T. Patton and E. S. Hatch.

Dr. S. S. Goldwater has resigned his position as commissioner of health of New York to resume the superintendency of Mt. Sinai Hospital.

Dr. John C. Donaldson, of Baltimore, has been appointed instructor in anatomy at the University of Cincinnati.

Dr. Ray Lyman Wilbur, professor of medicine, has been elected president of Leland Stanford Junior University, beginning his duties in January.

Among the doctors who took their vacation late in the fall and have returned are: Drs. Waldemar T. Richards, E. M. Hummel, Adolph Jacobs and Chas. N. Chavigny.

Married.—On November 10, 1915, Dr. Narcisse Francis Thiberge to Miss Jessie Agatha Scheppegrell, both of this city.

Died.—On October 15, 1915, Dr. Adolph Joseph Delcourt, a resident of Houma and a native of Belgium, and a well-known physician of this State for the past fifteen years. Dr. Delcourt was a graduate of the University of Liege, Belgium, and studied surgery at the University of Paris. He was at one time an operating surgeon at Dr. Jacob's Clinic in Belgium.

On November 14, 1915, Dr. Joseph H. Craig, of Amite City, La., aged 84 years. Dr. Craig was a surgeon with the rank of major in the Confederate army.

On November 4, 1915, Dr. James M. Murphy, of Bristol, Tenn., the oldest practising physician in Tennessee, aged 93 years.

On November 16, 1915, at Rochester, N. Y., Major A. Veeder, M. D., aged 67 years. During the Spanish-American war Dr. Veeder was the first to make known the discovery that typhoid germs are carried by flies.

Book Reviews and Notices

Materia Medica and Therapeutics, A Text-Book for Nurses, by Linette A. Parker, B. Sc., R. N. Lea & Febiger, Philadelphia and New York, 1915.

The aim of this book is to "present the use of drugs from a scientific basis in such a way as to appeal to the nurse's interest." It is written by a nurse who has had an education enabling her to understand more of the actions and uses of drugs than is the case with the average graduate nurse, and the work has been well done. In the opinion of the reviewer it is open to question whether it is desirable for nurses to attempt to obtain such knowledge of drugs as it would be possible (but highly improbable) for a nurse in training to obtain by the study of such a work.

J. T. HALSEY.

Clinical Diagnosis, a Manual of Laboratory Methods, by James Campbell Todd, Ph. B., M. D. Third Edition. W. B. Saunders Co. Philadelphia and London, 1914.

Dr. Todd has tried, and with very considerable success, to present a clear and concise statement of the more important laboratory methods, which have clinical value, and a brief guide to interpretation of results. His book is designed for the student and practicing physician, not for the trained laboratory worker. This being so, the reviewer questions whether it is not unnecessary to devote as much space to the details of different serodiagnostic methods as has been done.

The author has included in this new edition most, if not all, of the newer laboratory tests which are established as having real clinical value. We notice for example the valuable and easy 'Urease Method" for determination of urea. With some of the interpretations of the clinical significance of certain laboratory findings, some at least will disagree. For example it appears to the reviewer to be well established that the mere qualitative test for urobilogen has little or no real value. J. T. H.

Diseases of the Nose and Throat, by Algernon Coolidge, A. B., M. D. W. B. Saunders Co., Philadelphia and London. 1915. $1.50.

One wonders how the author has managed to crowd so much of importance into a volume of this size. One finds a style quite peculiar in medical literature, in the direct brevity of statement without one word in excess of what is needed to complete the sentence.

Ten sentences cover the discussion upon pain in nose and throat disease. After some thought, however, one finds difficulty in adding an eleventh which has not been suggested in the previous ten.

While the volume is small, it must be read carefully to be appreciated, and we find far more on the second glance than at first. To

a student who must have little time between lectures, or to the short time post graduate, this volume would be of undoubted value.

R. C. LYNCH.

Operative Gynecology, by Harry Sturgeon Crossen, M. D., F. A. C. S. C. V. Mosby Co., St. Louis, 1915.

This excellent volume of practically 700 pages is devoted exclusively to operative treatment and is no doubt intended as a companion volume to "Diagnosis and Treatment of Diseases of Women," by the same author.

The endeavor has been to present operative technique in all its bearings, the technique of the various operations, the difficulties likely to be encountered, the indications for operation in the various diseases and the form of operative procedure best suited to the particular case.

A detailed review of Dr. Crossen's book would require considerably more space than is allotted to the average book notice. The arrangement of the text is excellent. As an illustration, it may be said that the chapters on "Retrodisplacement and Prolapse of the Uterus and Bladder" contain a description of practically all of the operations that have been suggested for these conditions, yet the subject is grouped in such manner as to eliminate confusion. It is difficult to believe that such a task is possible, yet it has been accomplished, and in a text book.

The author states in the preface that the past may be designated as a period of invention of methods, the present as a period of the adaptation of operative methods to the exact pathological conditions present in the individual case. It can be plainly seen that this idea has been followed throughout the book. It has demanded great detail in describing anatomical features in order that operative technique may be understood.

Dr. Crossen was fortunate in the selection of an illustrator. The drawings by Mr. Ivan Summers are decidedly a feature of the book, and rank among the best to be found in medical literature.

The book as a whole is the most ambitious effort in the line of gynecological technique that has appeared for several years and will no doubt receive prompt recognition.

C. J. MILLER.

Dietetics, or Food in Health and Disease, by William Tibbles, LL.D., (Hon. Causa), Chicago; L. R. C. P. Edin.; M. R. C. S. Eng.; L. S. A. London. Lea and Febiger, Philadelphia.

This work may be considered a companion to "Foods: their Origin, Composition, and Manufacture" by the same author. Taking these two volumes together, they form a fairly complete system of dietetics. The importance of supplying food containing amino-acids of proper kind and in right proportion should be familiar to every practitioner. It is true that the balance of acid and basic groups, the changing need for individual eliments like phosphorus,

calcium, chlorin and iron furnish a series of complex variables which are probably as indispensable to crtain aspects of nutrition as they are unappreciated.

That great group of important bodies which have been called "vitamines" are entitled to careful study, for "so important are the vitamines that they are now regarded as the sine qua non of proper nutrition, and the subject is so far-reaching that it involves a large proportion of the foods of civilized man." In speaking of food in old age Sir Herman Weber says: "Few people know how little food is necessary in advanced age to maintain bodily health, and that the few people who live to more than eighty years of age are small eaters of meat. Moderation in this respect even after sixty years of age is an aid to longevity. The various chapters in the book are well presented.

For practical purposes, diets in different diseases are well covered. The practitioner will derive much satisfaction from the perusal of this book. STORCK.

Diseases of the Digestive Organs, with Special Reference to their Diagnosis and Treatment, by Charles D. Aaron, Sc. D., M. D. Lea and Febiger, Philadelphia and New York. 1915.

At the outset, we wish to give approval to the wide scope of the book, embracing as it does, consideration of diseases of the mouth, œsophagus, stomach, gall-bladder, bile-ducts, vermiform appendix, cecum, colon, sigmoid flexure, rectum, and anus. The interdependence at times of diseases of these organs, and similarity or confusion of symptoms, is sufficient justification to consider them in one book.

It is true as the author says in his preface, that "No subject has profited more by the modern spirit of scientific research than the diagnosis and treatment of diseases of the digestive organs." Truly, to keep abreast of the onward current one must ever be on the alert, possessed of wide experience, clinical acumen, and a scientific mind. Even with all of these, when his own resources fail, he should be broad enough to call to his aid such outside expert aid as is necessary to help him arrive at a proper diagnosis, or to point the way for rational treatment. We note that the technique for X-ray examination is not of such a character as to be of value to one desiring to undertake this line of work. For our part, we recognize that this highly specialized branch should be in the hands of capable, well-trained men who devote their whole time and attention to this line of endeavor. We offer the foregoing by way of criticism for its omission in Dr. Aaron's book. The work is amply supplied with rœntgenograms by Dr. Preston M. Hickey.

Extended notice is not given to the tchnique of new tests for the diagnosis of carcinoma, when such tests are of doubtful value, or have not passed the experimental stage. Ample prominence is given to diseases of the oral cavity; and oral sepsis as a focus of infection

in the etiology of some gastro-intestinal diseases, is emphasized.

The description of the simple methods of examination of feces shows the influence of Schmidt's teaching. Dr. Aaron is an apt pupil of Schmidt, and ready to foster his teachings which deserve more extended recognition.

With a little more elaboration here and there on the question of diet, we would consider the book ideal from the standpoint of treatment, as mechanical and drug treatments are well brought forth when available. Taking it as a whole, we think Dr. Aaron has made good. STORCK.

American Pocket Medical Dictionary. Edited by W. A. Newman Dorland, A. M., M. D., F. A. C. S. W. B. Saunders Company, Philadelphia and London.

This is the ninth edition, revised and enlarged. It consists of nearly 700 pages on thin paper; the type is clear, the size of the volume is handy. We have several times expressed satisfaction over previous editions and can only repeat our encomiums concerning this one.

The Practitioner's Visiting List for 1916. Lea & Febiger, Philadelphia and New York.

This deservedly popular record book for daily practice is presented in four styles: weekly, monthly, perpetual, and sixty-patient. It is printed on paper suitable for pen or pencil, substantially bound in red grained leather, of suitable pocket size, and includes valuable tables of reference, while its record portion contains ruled blanks for noting details of professional work.

Publications Received

W. B. SAUNDERS COMPANY. Philadelphia and London, 1915.

Diseases of the Nose and Throat, by Algernon Coolidge, A. B., M. D.

Diseases of the Skin and the Eruptive Fevers, by J. Frank Schamberg, A. B., M. D. Third edition, thoroughly revised.

A Text-Book of Pathology, by Alfred Stengel, M. D., Sc. D., and Herbert Fox, M. D. Sixth edition, reset.

Principles and Practice of Obstetrics, by Joseph B. DeLee, A. M., M. D. Second edition, thoroughly revised.

What to Eat and Why, by G. Carroll Smith, M. D. Second edition, thoroughly revised.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. October, 1915.

Medical Clinics of Chicago. Volumes 1 and 2, September, 1915.

WILLIAM WOOD AND COMPANY. New York, 1915.

Orthopedic Surgery, by Edward H. Bradford, M. D., and Robert W. Lovett, M. D. Fifth edition.

Text-Book of Nervous Diseases, by Charles L. Dana, A. M., M. D., LL. D. Eighth edition.

Physiological Chemistry, by Albert P. Mathews, Ph. D.

Diseases of Infants and Children, by Henry Dwight Chapin, A. M., M. D., and Godfrey Roger Pisek, M. D., Sc. D. Third edition.

LEA AND FEBIGER. Philadelphia and New York, 1915.

The Practitioner's Visiting List. 1916.

WASHINGTON GOVERNMENT PRINTING OFFICE. Washington, D. C. 1915.

Public Health Reports. Vol. 30, Nos. 40, 41, 42, 43, 44.

Report of the Department of Health of the Panama Canal for the Month of August, 1915.

School Hygiene, by J. A. Nydegger, Surgeon, U. S. P. H. S.

MISCELLANEOUS.

Ninth Annual Announcement and Catalogue of the College of Medicine and Surgery, The University of the Philippines. (Manila Bureau of Printing, 1915).

Report of the Bureau of Health of the Philippine Islands. For the Fiscal Year, from January 1 to December 31, 1915. (Manila Bureau of Printing, 1915).

Quarterly Report of Bureau of Health for the Philippine Islands. First Quarter, 1915. (Manila Bureau of Printing, 1915).

The Institution Quarterly. Vol. VI, No. 3. Springfield, Ill., September 30, 1915.

Official Rules of the Council on Pharmacy and Chemistry of the American Medical Association. October 1, 1915.

Bulletin of the Purdue Agricultural Experiment Station. August, 1915. Lafayette, Ind.

Bulletin of the Agricultural Experiment Station of Nebraska. Lincoln, Nebraska.

Reprints

Legal Liability of Producers of Biological Products, by Charles M. Woodruff.

A Suggestion with Regard to the Medical Treatment of Cancer, by Elliott C. Prentiss, M. S., M. D.

A Study of Locomotor Ataxia and Kindred Diseases Based on the Treatment of 600 Cases, by C. H. Burton, M. D., and Frank Burton, B. S.

Hints on Gynecological Practice in Thyroid Deficiency and Thyroid Medication, by Eugene Hertoghe, M. D.

Ovarian Secretion—A Few Observations from a Practical Point of View, by William Seaman Bainbridge, A. M., Sc. D., M. D., C. M.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans for October, 1915.

Cause.	White	Colored	Total
Typhoid Fever	7	1	8
Intermittent Fever (Malarial Cachexia)	4	2	6
Smallpox	.....	.....	....
Measles	.....	.....	....
Scarlet Fever	.....	.....	...
Whooping Cough			
Diphtheria and Croup	11	5	16
Influenza	3	.....	3
Cholera Nostras	.....	.....	....
Pyemia and Septicemia	.....	.....	....
Tuberculosis	32	52	84
Syphilis	8	2	10
Cancer	26	9	35
Rheumatism and Gout	1	1	2
Diabetes	6	1	7
Alcoholism	2	.....	2
Encephalitis and Meningitis	2	1	3
Locomotor Ataxia	1	.....	1
Congestion, Hemorrhage and Softening of Brain	18	16	34
Paralysis	6	2	8
Convulsions of Infancy	.....	1	1
Other Diseases of Infancy	9	10	19
Tetanus	1	.....	1
Other Nervous Diseases	1	.....	1
Heart Diseases	51	57	108
Bronchitis	3	2	3
Pneumonia and Broncho-Pneumonia	13	29	42
Other Respiratory Diseases	4	4	8
Ulcer of Stomach	1	1	2
Other Diseases of the Stomach	3	.....	3
Diarrhea, Dysentery and Enteritis	27	13	40
Hernia, Intestinal Obstruction	1	3	4
Cirrhosis of Liver	10	5	15
Other Diseases of the Liver	5	1	6
Simple Peritonitis	.....	.....	....
Appendicitis	6	3	9
Bright's Disease	26	31	57
Other Genito-Urinary Diseases	14	5	19
Puerperal Diseases	1	1	2
Senile Debility	1	1	2
Suicide	4	1	5
Injuries	31	21	52
All Other Causes	24	24	48
Total	363	305	668

Still-born Children—White, 23; colored, 26. Total, 49.

Population of City (estimated)—White, 272,000; colored, 101,000. Total, 373,000.

Death Rate per 1000 per Annum or Month—White, 16.01; colored, 36.24. Total, 21.49. Non-residents excluded, 19.30.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure.....30.04
Mean temperature .....73.
Total precipitation .....12.07 inches
Prevailing direction of wind, northeast.

New Orleans Medical and Surgical Journal.

VOL. LXVIII. JANUARY, 1916. No. 7

Original Articles

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. A complimentary edition of one hundred reprints of his article will be furnished each contributor should he so desire. Covers for same, or any number of reprints, may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

SYMPOSIUM UPON ABUSE OF CHARITY IN CHARITY HOSPITALS.*

I.

REPORT OF COMMITTEE ON HOSPITAL ABUSE.

By W. D. PHILLIPS, M. D., Chairman.

To the Officers and Members of the Orleans Parish Medical Society:

GENTLEMEN—Your Committee on Hospital Abuse wish to submit the following report of their investigations extending over a period of seven months. It is unnecessary for us to attempt to mention any of the numerous abuses that are daily perpetrated against the free clinics of the city, as every member of the medical profession knows quite well that such things exist.

By studying the rapid increase in attendance at the free clinics of this city and comparing it with the increase in population of New Orleans, one can see that the time has come when some means must be taken to prevent the true purpose of charity

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work from being monopolized by those who are well able to pay for medical attention, while the needy poor are suffering from their inability to obtain admission to hospitals or to receive necessary medical attention.

Upon visiting the various clinics, we have concluded that the greatest abuses occur in those of the Charity Hospital. There we found the abuse is general. Patients are frequently sent to the Charity Hospital not because they are unable to pay for services elsewhere, but because they have been told that they can receive the best treatment obtainable, without any cost whatsoever, and are assured that they will have no trouble being admitted.

Accident cases are often rushed to the hospitals in the ambulance and, without questions as to their ability to pay for services rendered, are instructed to return to the clinic for treatment. This atmosphere of Southern hospitality has become so widespread that in one instance we learned of a patient who came all the way from one of the large Western cities to New Orleans, because he had heard of the ease with which any one could gain admission to the Charity Hospital. This man did not come here because he was unable to pay for treatment, but because the price of a railroad ticket was cheaper for him than the fee for the same treatment in a private institution had he remained at home.

In the special line of work, as ear, nose and throat, also in the surgical departments, the abuse is most noticed. This might be accounted for by the fact that quite a number of people living out of New Orleans are under the erroneous impression that the cost for good treatment is beyond the means of the average man.

Again, in the handling of cases who are protected by the Workman's Compensation Law, the abuse has been very evident. A number of the cases are admitted almost every day to the Charity Hospital and are not only given first aid, but are instructed to return for further treatment. These cases then become a burden on the State's charity.

We might add that during the course of interviews with a number of the gentlemen representing the insurance companies, we were given to understand that this abuse of the State's charity is not according to the wishes of the insurance companies; but, to

the contrary, they prefer, in a majority of instances, that these cases should not be treated at the Charity Hospital.

Upon investigating hospital abuse in other cities, we find that New Orleans stands alone, inasmuch as practically no attempt is made to prevent gross impositions upon the free clinics.

We have written to various hospitals throughout the North asking information as to how they handle the question. In New York there is a law in force which states that "any person who obtains medical or surgical treatment on false representations from any dispensary licensed under the provisions of this Act, shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than ten dollars and not more than two hundred and fifty dollars." This is printed on the back of the admit cards to the out-patient department of the Bellevue and Allied Hospitals. Through the assistance and co-operation of the Board of Administrators of the Charity Hospital we have been able to obtain the information contained in a letter from the Attorney General's office, under date of October 27, 1915. Having this information, it is the recommendation of this committee that the Orleans Parish Medicap Society co-operate with the Board of Administrators of the Charity Hospital and the superintendents of the various hospitals to stop this abuse.

In conclusion we offer the following suggestions:

1. That the idea be conveyed to the public, by means of the press, that strenuous efforts will be made to arrest, as far as possible, the abuse of the free clinics by those who are in a position to pay for medical services.

2. That the admitting officer of each free clinic demand from the patients a card from the family physician, or some reputable physician, stating that they are entitled to the services of the free clinic.

3. That emergency cases be investigated after first aid treatment as to their ability to pay for services. This to be done by a special officer or, if possible, with the aid of social service workers.

4. In instances of "compensation" cases, after first aid treatment is given, that the hospital authorities notify the employers

of said injury, and also that they shall be expected to provide future treatment for patients.

5. That the ambulance surgeon requests, whenever possible, from the patients, where they want to be taken, as it seems to be the common impression that once the Charity Hospital ambulance makes a call the patient must either go to the Charity Hospital or pay the cost of transportation to a private hospital.

6. That the co-operation of the physicians throughout the State be requested along those lines.

7. Enactment of laws against hospital abuse.

II.

ABUSE OF CHARITY TO BE FOUND IN INDOOR SERVICE.

By J. A. DANNA, M. D., New Orleans.

Charity is the noblest of all the virtues springing from the innermost depths of the heart of man.

From time immemorial it has been dispensed by individuals in one form or another, usually, however, in a haphazard, whimsical way, though from time to time men have sought to do it in a logical and systematic way. In the development of society the constituted authorities of civilized nations have felt their responsibilities in this respect more and more, until to-day, in every community, works of charity exist to meet all demands that the finances of the community are able to meet. With the modern development of efficiency in every line of human endeavor, the subject of charity, both public and private, has called for a special inquiry of those most interested and best acquainted with the subject. And so we are here to-day inquiring into the manner of dispensing charity in the greatest single institution of charity not only in Louisiana but in the whole South.

In considering the subject of the abuse of charity in the Charity Hospital, the first question which confronts us is, "Who are entitled to the privileges of the hospital? Who should receive these privileges, and from whom should they be withheld?" It is obvious that the only means of judging is the determination of a man's ability to pay for what he gets. If an individual can pay for such treatment as he gets in the hos-

pital, then the conclusion has generally been drawn that he ought not to receive it gratuitously at the hands of the State or of some other philanthropic source or method. And here, I believe, is where we may look principally for the reason that is at the bottom of the largest number of cases where the charity of this institution has been abused. For when we get to dividing the community into those who can afford to pay and those who cannot afford to pay, we find outselves obliged to resort to the following classification:

First: True paupers who are not in a position to pay for anything. *Second*: Those who can pay for medicines and can stay home to take the treatment prescribed for them, but who cannot afford to pay the doctor's fee. Next, those who can afford to pay the doctor and for the average medicine, but cannot afford the fee of a specialist, such, for instance, as an examination by an oculist. Next, those who can pay for the average doctor's fee, but who cannot pay an extra consultation fee. Next, those who can pay the doctor and consultant but cannot afford the fee for an operation. Next, those who can afford either the fee for an operation or the price of a room or a bed in a private hospital but cannot afford both. Next, those who might afford a doctor's fee and the average hospital fee but cannot stand the expense of a treatment that might be indefinitely prolonged in a hospital. Besides what has just been mentioned, a patient may find it difficult to pay for X-ray examinations and pictures, cystoscopies, laboratory fees, etc. It is thus seen that the classification of those who are entitled to treatment in the Charity Hospital is not a very simple matter, and that in some instances it would be very hard to say in which of the above categories a patient should be placed. Again, the general observation might be made, for instance, that any man who makes one hundred dollars a month ought to be able to pay for treatment for himself or any member of his family, and should not be treated for charity at the Charity Hospital. But a hundred dollars a month doesn't go very far, if a man has a family of any size, toward giving them the absolute necessities of life.

Let us look at the subject from another viewpoint, and explain, if possible, how it is that many people who really should not take advantage of the facilities of the hospital do so.

The Charity Hospital is a State institution, in which every individual feels a particular pride, and the frequent publication of its reports as read at monthly and annual meetings, keep the public posted as to the progress and up-to-dateness of the institution. We all know, for instance, that our ambulance service has no superior in the world; that this service, and the accident service of the hospital is taken advantage of by every citizen of the community as a matter of course, and without the least bit of feeling that he is an object of charity. When a person is injured on the street the first thought that comes to the first one who comes along is "let us send for the ambulance," which means the Charity Hospital ambulance, and when the ambulance comes no thought is given to the possible desire of the patient or his family to have him conveyed to a private institution or to his home, and no matter how rich he is he goes right to the Charity Hospital, and as a rule he stays there until he no longer needs hospital treatment, and after he leaves the hospital he gets the benefit of the outdoor service until he no longer needs outdoor treatment. He will probably have a number of X-ray pictures taken, if they are necessary in the course of handling of his case. He will be given injections of costly medicines, have costly laboratory examinations made for him, and yet the idea will never occur to that man, during all that time that he has had the benefit of all these things, that he is an object of charity. Many others before him, who were as wealthy and well-to-do as he, have done the same thing; there may have been three or four of the same kind in the same ward.

Right here let me digress a moment to state that the impression seems always to have existed that when a man is picked up by the ambulance that man must of necessity go to the hospital. The ambulance surgeons have always been instructed to take the injured person to any address that he or his friends request, and the hospital authorities have always encouraged the taking of patients to their homes or to private institutions. To continue, it is a well-known fact that the medical and surgical staff of the hospital contains the names of those who stand highest in the profession. So that the knowledge that he is in the best of hands additionally encourages a man in feeling thoroughly at home.

Having thus come familiarly in contact with some of the departments of the hospital, a patient who has had the benefit of the accident department will feel no shame in coming back later to the outdoor service to be examined either for the later results of the same injury or for some other condition, and as he gets familiar with the other departments of the hospital he may have his nose and his throat examined, may see a neurologist, or any of the other specialists who give their good time to the hospital for nothing. He might even bring his children there for operation, though he might still find it a little difficult to reconcile himself to the thought of being admitted as a patient for ordinary treatment or even for operation.

Yet again, you can easily understand that a man who might well be able to afford a large-sized fee and hospital bill, approached by a friend who would say to him:

"I understand you need a surgical operation, you should have the best surgeon in town. I know Dr. so and so, he has a ward in the Charity Hospital. Let me introduce you to him, or give you a letter to him and ask him to admit you into his ward. He is a very good friend of mine and he will treat you well."

I have seen many such patients in wards of the Charity Hospital, who were admitted at the request of the members of the Board of Administrators and other friends of the hospital whose request could not very well go unheeded. If these patients were told that they were as guilty as if they had joined a bread line and thereby deprived some hungry soul of a loaf of bread, they would resent it, to say the least. And here let me make the point that, no matter how poor a man is, he is not out of reach of the service of competent surgeons and specialists. The idea that a great surgeon charges high fees is erroneous. He charges fees in keeping with the pocketbook of the patient and his family, and he treats and operates on many patients without any compensation whatever.

Now what is the remedy? Close inquiry at the admitting office of the hospital as to a patient's ability to pay?

Repeated consideration of this subject by previous administrations of the hospital has each time finally led them to the conclusion that any system of right cross-questioning at the admitting office would cause many worthy persons to stay away from the hospital rather than face a fire of cross-questioning which would put them on the offensive in the effort to find out

whether or not they were asking for something which they were not entitled to, while the individual against whom this measure might be directed, if so inclined, could easily make false statements and even get written certificates in his behalf. Thus such measures might have the very opposite effect of the one intended.

The same question has been considered in two articles recently published which might appropriately be cited here. Blanche Jobes and Frances Hostetter, in the current number of *"The Modern Hospital,"* in a paper entitled "A Social Survey of Dispensary Patients of Philadelphia," reported investigating one thousand dispensary patients and found only twenty, or two per cent, who had taken advantage of facilities that they were probably well able to pay for. Michael M. Davis, Jr., director of the Boston Dispensary, in a paper read before the American Hospital Association in 1913, entitled "The Present Status of Out-Patient Work," cites thirty-six reports from the largest dispensaries of the country that exclude those who are able to pay, from which he gathers the following statistics:

3	excluded	5	to	20%	of	those	that	applied
6	"	2	"	5%	"	"	"	"
7	"	1/2	"	2%	"	"	"	"

and 21 less than 1/2 per cent.

He makes the following observation:

"May not this conclusion be drawn? The protection of the institution and the medical profession from abuse by the small per cent of improper subjects for out patient treatment is a necessary task; but the provision of efficient treatment for the 90% or 99% of patients who are admitted is a first essential."

While these figures refer to outdoor patients, they speak even more loudly for indoor patients, for it is a well-known fact that the outdoor services are more abused by those who can pay than the indoor. It will thus be seen that efforts at exclusion of those not entitled to the hospital treatment by the usual methods would exclude only a small number of those actually treated. What, then, is the real remedy? It is a fact recognized by all students of history and political economy that particularly in the present enlightened age no evil in which a large number of people are concerned can be remedied by any other means than by education of the public. When a man can be made to feel that the public thinks he ought to be ashamed to take advantage of a charity

institution if he is well able to pay for the same treatment in a private hospital, then we will have remedied it without any further effort on the part of physician or hospital administration, and I strongly hope that this public meeting will go far toward accomplishing this end.

But there is one form of abuse of the charity of the hospital with which we have been recently brought face to face by the promulgation of what is commonly known as the employers' liability law. This law makes it obligatory on the part of an employer to supply medical and surgical aid, including professional and hospital treatment, to every employee who is hurt in the discharge of his duties. Most employers have protected themselves by getting out policies in large liability companies, who then become responsible for the carrying out of the provisions of the law. Thus the employer pays the insurance company so much a year, for which the insurance company agrees to supply all injured employees with professional and hospital aid, paying the doctor and hospital bills. Now a great many of these patients are being brought to the hospital. Is it fair that the hospital should treat these patients for nothing when somebody else, the insurance company, is receiving the cash for the same purpose? At a meeting of the medical advisory committee, in which the matter was discussed, I made the following proposition, which was accepted at the meeting and was sent as a recommendation to the board:

"That the admission to the hospital of patients who are subject to the provisions of the employers' liability law be discouraged. That where a patient was brought in in an emergency and given treatment, that a bill be rendered to the employer or insurance company responsible under the law, for an amount equivalent to what he should have to pay a private institution, including the surgeon's fee."

My argument was that even if the hospital were not expected to charge for the treatment of its inmates, it was not at all unfair to ask the employer or the insurance company to pay what the law required should be paid, and that the amount should include what would usually be paid in surgeons fees, in order to as nearly as possible make it cost the employer or responsible company the same amount that it would cost him in a private hospital. Thus there would be no unfair competition by the Charity Hospital against the outside profession and against other private hospitals, and when the employer found out that it would cost no more for

treatment at a private hospital than at the Charity Hospital, and the employee found that he had his choice of either institution, then the evil would automatically remedy itself.

As this subject is going to be more fully taken up by subsequent speakers, I leave its further elaboration to them.

III.

EMPLOYERS' LIABILITY AND HOSPITAL CHARITY.

By MUIR BRADBURN, M. D., New Orleans.

Although we have not yet had one year's experience with the working of the Burke-Roberts Employers' Liability Act, it is opportune to discuss the relation of the employers' liability to the Charity Hospital, in order to point out the impositions which we have noticed at the outset, and to attempt to prevent their repetition.

The act, which became effective January 1 of this year, states that during the first two weeks after injury, the employer must furnish reasonable medical, surgical, or hospital services, not to exceed $100.00 in value. It is evidently not implied in this act that Charity Hospital is to be burdened with employers' responsibilities.

After several months' observation in the out-clinic work, I have come to the conclusion that the workmen themselves in a majority of the cases are the offenders, through either ignorance or election. It has been our custom to inquire of the workmen their employers' names, and those that come under the provisions of the Employers' Liability Act have been referred back to their employers in order to receive the surgical attention that has, or should have been, provided for by the latter. One case came under observation who had been instructed by his employer to go to the company's physician for treatment, but who instead came to the out-clinic, where he was attended several times, before he found that it would probably be more expeditious to see the company's physician at his private office than to wait his chance among the forty to sixty clinic cases. He acknowledged that he had told a deliberate falsehood when questioned as to his employer's liability at his first visit to the clinic. In another instance there was a patient who had been referred from the clinic to his employer that he might receive the services of his employer's physician. This case returned the very next day without having

made any inquiry as to his employer's physician. As I have not received any instructions from Dr. Wilkins, Superintendent of Charity Hospital, as to the disposition of these cases, I have not refused to treat any of them, as I was not certain that other provision for their care had been made.

Another instance of offense on the part of these "compensation" cases is to have patients who have been treated at a doctor's office consult the same doctor in the out-clinic for the same injury. These, and other instances that I could mention, show how the employees themselves are the offenders. However, I have found both employer and casualty company to be imposers. A few days ago, a patient, whose appearance was not that of a pauper, applied for treatment at the surgical clinic. On questioning I learned that he was injured while at work, and informed him that his employer was responsible for his medical attention; then I learned that he was himself an employer. It is to be presumed that if any of his workmen were injured they would be instructed by him to follow the same course. This employer's excuse for coming to Charity Hospital was that he did not know he could get the antitetanic serum elsewhere. I suppose he neglected to add "for nothing." I referred this individual to his physician for further treatment.

In other instances we find that employers have instructed their workmen to go to Charity Hospital for treatment. However, some of these employers have made provision for the care of their injured workmen. From observation it seems to me to be in these cases a question of investigation on the part of the hospital when first aid is applied for.

Some employers add insult to injury by asking the doctors in the out-clinic, who have already rendered their services without charge, to give a certificate of their employee's injury, the treatment rendered, and the probable disability.

I have learned from a very reliable source that a gentleman prominently associated with one of the casualty companies stated that, although they had a physician to attend to their accident cases, a great many were treated at Charity Hospital, and that his company intended permitting their cases to continue going to that institution until they were stopped. I have reported this to Dr. Gallant, who I am sure will investigate, and remedy, if possible, the imposition.

I believe, however, that most of the casualty companies have no desire to receive the gratuitous service of the hospital. I know that the "insured" have been instructed repeatedly by the casualty insurance companies not to send their cases to Charity Hospital. I know also that in some instances the company has paid the hospital while patients for whom they were responsible were being treated there. I know of cases also in which insurance companies have paid for these "compensation" cases at private institutions for as long as six weeks, rather than impose on Charity Hospital, although by law they are responsible for only two weeks.

The work in the out-door clinics is increasing; we have reason to believe that a large percentage of these patients are not deserving of charity. Where we can we should prevent imposition. We should try, with the hospital, to lessen its obligations. These compensation cases furnish one item that can be eliminated. I am indebted to Dr. Gallant and to Dr. Perkins for their assistance in obtaining records of these cases. I find that in one clinic in 24 clinic days one hundred and sixteen "compensation" cases were seen. These cases seen in the white and colored male surgical clinics average nearly nine a day. As there are 50,000 working girls and women in New Orleans, it would not be surprising to find a similar average in the female clinics. In the accident rooms we have records of only one-hundred and thirty-four compensation cases in five months. As the great percentage of clinic cases has received first aid in the accident room, it is evident that the last figure greatly underestimates the number of such cases seen.

These brief remarks I hope will serve their purpose in bringing before you the question of Employers' Liability and Hospital Charity. To prevent the dispensing of needless charity I suggest:

A. (1) That the hospital instruct the chiefs of clinics and clinical assistants to keep careful records of these compensation cases. In this way we can learn the offenders.

(2) To refer all such cases who come to the clinic for treatment back to their employers. In this way we can educate both the employer and the employee.

B. That the hospital obtain from the insurance companies the names of both the employers whom they insure and

the doctor who attends to their accident work; that such information be given the doctors in the clinics in order to enable them to refer such cases to the proper physicians.

C. That these compensation cases appearing for treatment in the accident room of the hospital be carefully investigated. If no urgent emergency presents, that the cases be referred to the employer's or insurance company's physicians before first aid is rendered. I wish to repeat that it is a question of educating both employer and employee as to the provisions of the Employer's Liability Act.

D. That when the ambulance is summoned for an injured workman his employer's name be learned. The act above mentioned provides that the employer furnish hospital service. I suggest, therefore, that instead of taking these patients to Charity Hospital the ambulance be instructed to take the patient to that institution which has been selected by his employer or by his insurance company.

IV.

ABUSE OF CHARITY FROM THE STANDPOINT OF LIABILITY COMPANIES AND WORKMEN'S COMPENSATION ACT.

By MR. HENRY RIGHTOR, Attorney, New Orleans.

I have been asked to address you on "Abuse of Charity From the Standpoint of Liability Companies." I desire at the outset to correct an impression that seems to have gained currency that the liability companies are disposed to avail themselves of the services of the Charity Hospital without pay. This is as far from the fact as possible. It is to the interest of the liability companies to pay for all the services which they receive, because then, and only then, can they maintain the necessary control over that service called for by the ordinary dictates of good business management. It is a bold and brutal fact, which may as well be recognized from the outset, that the service afforded by the Charity Hospital to operatives injured in industrial enterprises covered by liability companies' policies is not satisfactory, and the reason for that is that the service being gratuitous, the liability companies have no say-so as to how it shall be done. I speak

in generalities because the details would be tedious, and it will be more in order to discuss those details and reach a proper solution of them when the general question has been accorded the proper treatment.

The Charity Hospital was founded a great many years ago with the benevolent purpose of curing the ills of those not able to pay for treatment. It has done great good, it has been singularly free from perversion of its purpose and as a consequence its fame has spread throughout the civilized world. But since the Charity Hospital was founded, much water has passed under the bridge. Times have changed, social relations have changed, and the laws, which are but the reflection of the necessities of the day, have likewise changed. The most revolutionary law as affecting the Charity Hospital which has been passed since its foundation is the Workmen's Compensation Act of Louisiana, which went into effect on January 1, 1915. It is well that we should understand exactly what that act is, because it has a very vital bearing upon the question which is under consideration to-night, and I have no doubt personally that much of the confusion that surrounds this subject is due to an imperfect realization of the provisions of the Louisiana Workmen's Compensation Act. For our purposes to-night, the Workmen's Compensation Act of Louisiana may be roughly described as one which provides that where an industrial worker is injured or killed, his employer shall compensate him or his dependents for that injury or death in fixed sums provided by the act. During the first two weeks after the injury is incurred, the injured employee receives no compensation, but the employer must furnish the injured employee with reasonable medical, surgical and hospital services and medicines not to exceed the sum of $100 in cost. This is mandatory on the employer. It is a charge upon him definitely fixed by the law. The act does not state who shall furnish that medical, surgical and hospital services and medicines, but it provides that whoever furnishes the same is entitled to pay therefor. Hence the injured man, by virtue of his injury, carries with him, as it were, a draft in blank upon his employer for the cost of the medical, surgical and hospital expenses and medicines not to exceed $100 furnished him. It is certainly true that whatever is given to a man or an institution by the law is the property of that man or that institution.

When William Smith, an employee of the John Doe Lumber Company, of Louisiana, presents himself at the Charity Hospital with a broken leg suffered in the course of his employment at his employer's lumber plant and asks for treatment, he is not a subject for charity. He is given by law the right to go to the Charity Hospital for a cure and have the expense thereof charged to his employer. The John Doe Lumber Company is not a subject for charity. On the contrary, the John Doe Lumber Company, whether insured or not insured, is quite well able to take care of itself, and nothing could be farther from the spirit and intent of the Charity Hospital than for it to assume the debts imposed by law upon that lumber company. The Workmen's Compensation Act is in spirit a form of taxation. Its intent is to throw upon the community as a whole, through its industries, the cost of taking care of the unfortunate industrial workers who are injured in the course of their occupation. That end is utterly defeated and the whole scheme of taxation thrown out of gear if an institution as important and largely patronized as the Charity Hospital relieves the employer of the cost of medical attention thrown upon him by the law. Therefore, the refusal of the Charity Hospital to accept pay from the John Doe Lumber Company for medical attendance rendered its injured employee, William Smith, would be not only false pride, but bad citizenship and bad business.

The Charity Hospital as an institution possesses, if I may use the expression, a dual personality. It is a business institution in one capacity, a charitable hospital in another capacity. In the first capacity, that of a business institution, it makes debts and pays them, has debts owing to it and, if it does its duty, collects them. In the second capacity, that of a charitable hospital, it furnishes services free to those not able to pay. The laws governing the Charity Hospital, chiefly an act passed by the Legislature of 1855, provides that the Board of Administrators shall have full power and authority to administer the hospital, etc. Further, that they shall have the power to order, establish, alter and put into execution all by-laws and ordinances which they think best suited to the interests and regulation of the hospital, if such by-laws and ordinances be not contrary to the laws of this State, to the Constitution of the United States, nor to the ordinances of the corporation of New Orleans. I do not know what

are the by-laws and ordinances for the internal administration of the Charity Hospital, but the law makes it clear that it is its intention to give the Board of Administrators all necessary authority to practically administer the affairs of the institution and to alter any existing rules wherever it shall be found that such alterations are necessary.

Institutions, like men, must keep pace with the times. A great and useful institution like the Charity Hospital cannot afford to rear a granite wall of conservatism against the moving forces of the day. The Charity Hospital cannot afford to change its identity from an institution dedicated to the relief of suffering humanity to an institution dedicated to the fattening of employers of labor and insurance companies by relieving those employers of labor and insurance companies from obligations put upon them by the law. Therefore, the Charity Hospital should collect from the employers of every injured industrial operative the fee which the law allows the institution for services upon their employee. This does not involve a change of the institution's complexion as a charity hospital; it merely involves the provision of the necessary machinery for determining who owes the Charity Hospital money, what the amount owing is, and the collection of that amount by due and orderly process. In this connection it is well to bear in mind that after the injured employee, William Smith, of the John Doe Lumber Company, has been in the hospital for two weeks, the responsibility of his employer, the John Doe Lumber Company, for the payment of his medical, surgical and hospital expenses and medicines ceases, and it is quite in order then for the Charity Hospital to reassume its capacity as a charitable institution and take care of William Smith for the rest of the time until he gets well.

In conclusion, gentlemen, I feel that I am conveying to you the sentiment of the liability companies when I say that we are heartily in accord with, and indeed urge upon you, the establishment of a system by which services rendered for the first two weeks to injured employees engaged in industrial occupations covered by the act shall be charged to the employer, because by that system, and that system only, can the real purpose of the law be carried out, and there is no one that is more interested in the enforcement of the law than the liability companies themselves. We are not seeking free services for our plants; we are

not seeking a fictitious experience under our policies which undertake to pay for the first two weeks' medical aid, but, on the contrary, we are seeking a fair and just charge for the services which we are called upon to render, and the establishment of a system which will permit us, not by tolerance, but by right of contract, to secure for the unfortunates of whose destinies we are the stewards the best and most efficient of treatment.

V.

ABUSE OF CHARITY FROM THE STANDPOINT OF HOSPITAL MANAGEMENT.

By MR. A. B. TIPPING,
Superintendent Touro Infirmary, New Orleans.

When I received a communication from Dr. Allan Eustis, Chairman of the Committee on Scientific Essays, inviting me to read a paper before the Orleans Parish Medical Society on the "Abuse of Charity in Charity Hospitals," I felt that a distinct honor had been conferred upon me, yet, although it gave me great pleasure to accept the invitation, I did not fail to realize that there were others in this city who were in a position to handle this subject far more ably than myself, through coming in contact with more charity patients, and who were more competent students of human nature. But I did not feel that there was any person more closely interested in the subject than myself, and for this reason it was particularly gratifying to me to have been given an opportunity to be present this evening.

Owing to some extent to its locality, partly because many of the patients display more than the average intelligence of that class of the community which free clinics serve, and as the feeling exists that many of the patients are in a position to pay, the Touro Infirmary free clinic has sometimes been called the fashionable clinic of the city. Whether this term is correct or not, at any rate all classes are cared for. It is true that to a casual observer, when he looks at many of the patients in the waiting room, their appearance leads him to believe that they should be able to pay something, but taking into consideration the conditions which prevail at the present time, I do not consider that the free clinics are imposed upon except to a small degree.

Unfortunately not a single charity hospital in this State has a substantial endowment fund. They all depend upon the support

of the State or city by taxation and the munificence of charitably disposed persons, or upon the income from private patients to carry on their work. The same tale of an inadequate flow of funds can be told by every charitable institution in Louisiana, consequently the elaborate systems utilized in hospitals elsewhere with a view to preventing abuse in the free departments cannot be put into effect here.

Touro Infirmary treats about 25,000 new patients in the free clinic annually; that is, an average of about 80 each clinic day. The total attendance is approximately 300 a day throughout the year. To properly investigate the financial resources of 80 persons daily would entail an expenditure of from $300.00 to $400.00 a month. If it were not for the principle involved, I believe I would advocate giving this sum to the junior members of the medical profession in return for services rendered in the clinics, rather than expend the money on investigators, because I do not think that as a result of these investigations much more than this sum would be collected by the doctors, under present conditions.

However, the principle is unquestionably correct, and it is the duty of the hospitals to protect the medical profession by preventing the abuse of clinics so far as possible. It would be strange indeed if this form of charity were not misused to some extent, even as doctors in their offices are imposed upon at times by patients who are amply able to pay the regular fees but beg for reductions under some pretext or another.

At Touro Infirmary the doctors are requested not to discuss finances with any of their clinic patients; but if in questioning a patient regarding his address, occupation, etc., or when his appearance is such that the doctor thinks he should be able to pay, he is requested to send the name and address of the patient to the Superintendent's office. The Superintendent then writes to the patient, or the head of the family, asking him to call at the Touro office before the patient again attends the free clinic. If he does not report, he receives no further treatment; if he calls, he is closely interrogated and, when considered able to pay, he is advised that he must go to a doctor's office. On the other hand, if he is found to be deserving of free treatment, a note to that effect is given him, to be handed to the doctor in charge of the clinic. Of course, it would be foolish to suppose that mistakes are not made and that some plausible persons do not deceive me.

The examinations are incomplete because the patients' statements cannot be verified, through lack of funds to maintain an investigating bureau.

But the results of my interrogations, nevertheless, convince me that the clinics are not so greatly abused as is so commonly supposed. I must confess that the benefit of the doubt is given to patients as a rule, and the reason for this is because there is such a tremendous gap in cost between free service in the clinics and equal service in the doctors' offices. It is true that there are members of the medical profession who are willing to receive patients for 50 cents a visit, but I couldn't persuade myself that the patients would receive the same attention and advice at their hands as if they were attended in the free clinic, and I would feel that I was not acting in the best interests of the patients, or the community, if I denied them the privilege of obtaining the best advice procurable, free of charge if they cannot pay the customary fees.

My faith in the good work performed in the free clinics is very great and I cannot refrain from placing on record, at this opportunity, the extreme admiration I have for the doctors who willingly and often at personal sacrifice give so much of their time and ability to the patients who attend the free clinics.

Probably 30% of the patients treated in the free clinics are, in my opinion, able to pay 50 cents a visit, plus the cost price of the medicines, dressings, X-ray plates, etc. On this point I would like to dwell a little later, after discussing the other departments of the hospital.

In the free wards of Touro Infirmary there is extremely little abuse. All patients who are recommended for admission are now closely questioned and, if there is any doubt in our minds regarding their ability to pay, their statements are investigated, and if then, in our opinion, they can pay, they are informed that they must accept a transfer to private accommodations or not remain in the hospital. When a patient is transferred he is told that the doctor must be paid a fee, in addition to the hospital charges.

Emergency cases are treated in Touro Infirmary, but every endeavor is made to collect a hospital charge for dressings, etc., and a doctor's fee from those who are able to pay.

Accident cases covered by the Workman's Compensation Act

are attended by the members of our staff, the first treatment being given at Touro Infirmary and subsequent treatments in the doctor's office. Touro makes a charge for the first treatment and notifies the doctor it is a compensation case, so that he may render a bill for his services. Time will not permit me to enter closely into the merits and demerits of the Workman's Compensation Act, but I do feel that it is open to criticism in some respects, principally on the inadequacy of the doctor's fees under some circumstances and the limitation of a patient's stay in a hospital to two weeks.

At Touro Infirmary, therefore, there is little possibility for abuse except in the free clinics. Every effort is made to protect the members of the medical staff from persons who are able to pay, yet plead poverty. It is not the policy of Touro to accept payment from any patient unless the attending physician also receives a fee, except when an arrangement of this nature is, under special circumstances, first made with the attendant. I may also state that it is not the policy of Touro to extract the last cent from free patients. When they leave the hospital they require some money to support themselves with until they can resume work; they are convalescents and require building up, and it would be wrong if the hospital drained them of all their available cash.

Patients who are financially able to pay should not be permitted to receive treatment in any State, city or private hospital free of charge. At such a time as this, or at any other time, for that matter, when the State institutions cannot be sufficiently supported by the State, and when the income of private hospitals is less than in former years owing to the uncertain financial conditions of the community, why should hospitals have to pay the cost of material used on joy-riders in affluent circumstances, for instance, because they happen to become careless or intoxicated and meet with an accident? And why should the medical profession be expected to donate their services, because those who met with the accident happen to be brought to the Charity Hospital?

Would those same individuals expect to have the right of placing their parents in an alms-house or their sisters and brothers in an orphan home, if their parents died, because the city contributes towards the support of those institutions? Such institutions

would refuse any request of this nature, taking the attitude that the homes were for the indigent poor only, not for persons who could be maintained by their relatives, and all hospitals should be placed on a similar basis.

How should those patients who are at present treated in the free clinics, and could pay 50 to 75 cents a visit, be handled? This matter has received a great deal of consideration by myself during the past two years or more, and I have concluded that *pay clinics* should be established. Such clinics should be conducted by and be under the full supervision of the hospitals. The patients should pay for each visit and nominal charges for dressings, X-ray plates, medicines, etc. The first charge against the income would naturally be the cost of maintenance; the second charge, the cost of operating an investigation bureau to decide whether the patients should be cared for in the free or pay clinic, or referred to doctors' offices; the third charge, the remuneration of the junior doctors who work in the clinics. They should be salaried and work under the supervision of those in charge of the clinics. Pay clinics should not be conducted for purposes of profit to hospitals.

What would be the results of such a system? 1. Probably 30% of those now obtaining free service would pay a moderate sum for professional services. 2. Many patients whose pride prevents them from attending a free clinic and whose pocketbooks cannot afford the expense of office visits, consultation fees, etc., will have a place to go where the best advice can be obtained at a cost within their means. 3. An excellent post-graduate course would be obtained by doctors in these clinics, and instead of having to pay for this, they will receive a salary of about $500.00 a year, for a few hours' work and study each day, which would considerably help many a young graduate to get a footing. Doctors in charge of clinics should not receive, and would not I think expect, any remuneration. 4. It would provide more assistants in the clinics, thereby relieving those in charge of much detail work and curtailing the number of hours they now have to remain in their clinics. 5. The necessary funds would then be forthcoming to enable the hospitals to effectually prevent abuse of free clinics, as well as the pay clinics.

It may be said that so many persons would take advantage of such clinics that office practises would suffer, but this could not

be the case if every patient's financial condition were thoroughly investigated. Another objection might be raised to the effect that the young doctors with influence would be given the appointments. Preference should be given to those who intend to remain permanently in New Orleans, who have served an internship of two years in a hospital, and to whom a small salary would be of substantial assistance during their first year or two of practise. Such appointments should not be made for a period of more than two years.

I am afraid I have trespassed upon your valuable time long enough this evening, but there is another subject in which I have a deep interest which I would like to bring to your notice for consideration, if you will permit me, before I close. It is another form of abuse of charity hospitals.

As we are all aware, the city of New Orleans is overrun with sick benefit societies. Some of these are conducted mainly for purposes of profit to the share-holders, others for the mutual benefit of the members of the organizations. It is of the latter only that I wish to speak, because I believe they would be willing to entertain suggestions for the betterment of the welfare of their members, whilst the former,—those which are conducted for personal profit and instruct their doctors not to prescribe costly drugs, etc., because they would lessen their income,—would probably not sanction any change.

Why not let the clinics assume charge of the society patients and eliminate the society doctors, as such? This is a matter easily capable of adjustment, with very decided advantages to the societies, patients, doctors, and clinics. What would be the method? Instead of calling the society doctor when he is sick, let the patient telephone to the hospital if the case is really urgent, and a doctor will be sent to him; if not urgent, he should attend the clinic.

Instead of the societies paying the doctors let them give the money to the hospitals, who would take over the services of the society doctors, if they were efficient, and pay them a salary. In other words, ask the societies to allow the clinics to care for their sick members on the same financial terms as they are at present granting to their doctors.

Let us consider what the advantages would be. First—To the Societies. Perhaps the most important would be a saving in ex-

penditures for sick benefits to those members who take unfair advantage of their membership by feigning sickness and drawing the benefit when they are not actually unable to work. An official of one union informed me that this would probably entail a saving of $2000.00 a year to his union, as he knew that certificates would not be signed by hospitals exonerating members from their work unless there was good reason.

Second—To the members of the societies. Just the difference between receiving the services of one doctor, who is supposed to attend them for any and all diseases, and twelve doctors, each a specialist in his own department. They will receive the benefit of a thoroughly efficient service, which is in contrast to that which many of them now obtain, for we all know that some society doctors do not and cannot give their patients the attention or expert care they should receive. If the members are too sick to attend a clinic, a doctor will be sent them who is recognized by and under the supervision of the hospital.

Third—To the doctors. They will be remunerated for their services by a hospital, instead of a society. Instead of being subject to call at all hours of the day or night, they will be present in one of the departments of the clinic for certain hours during each morning and be subject to call for house visits only during definite hours. For instance, if with the receipts from the societies a hospital can place twelve doctors on a salary, each would be detailed for house calls during two hours in twenty-four only.

Within a short period of time the hospitals would have in their possession a "black list" consisting of those persons who are constantly needlessly worrying doctors, sending urgent calls to come to their houses for minor troubles. There are plenty of such persons who telephone for a doctor under the slightest pretext, calling up a different doctor on each occasion.

Fourth—To the hospitals. The hospitals would gain by obtaining additional assistants in greater proportion to the extra number of patients. On several occasions I have questioned a number of patients in the Touro clinic and found that between 70 and 80% of the colored patients and about 35% of the white patients were members of a society. Some belonged to three societies. These people were paying dues to obtain medical service from their society doctor, yet being cared for in the free clinics.

It may be asked, which would the patients prefer,—to be

allowed admission to the free clinics and drop membership in their society, or continue their membership and be excluded from the clinics? I am very much inclined to believe that the membership of the societies would be considerably decreased if such action were taken and, after all, the clinics would have much right on their side if they saw fit to do this.

For one or two hospitals to endeavor to prevent abuses, whilst the other hospitals give free treatment to all comers, will not correct the evils to any great extent, as those who are able, but do not wish to pay, will transfer their attendance to the latter hospitals and simply throw an additional burden upon them. On the other hand, with concerted and uniform action taken by all hospitals, a great deal of good could be accomplished.

SYMPOSIUM ON MENTAL DISEASES.*

I.

EXISTING FALLACIES REGARDING MENTAL DISORDERS.

By RALPH P. TRUITT, M. D.

Records of abnormal mental phenomena reach back to the very dawn of history, and are to be found in the oldest books of both the Eastern and Western worlds. Thus, in the Old Testament we read of Saul's recurring periods of depression, when "the evil spirit from the Lord" was upon him. We read, again, of the delirium of Nebuchadnezzar, in which he believed himself changed into an animal—he "did eat grass like an ox, and his body was wet with the dew of heaven, till his hairs grew like the feathers of eagles, and his nails like birds' claws." Turning to the West, abnormal mental phenomena frequently appear in the pages of Homer. Ajax was tortured by the furies until he fell upon his own sword, and we are told that Ulysses simulated madness in order to justify his abstention from the Trojan war. The famous oracles are not altogether attributable to fraud, but are probably partly to be explained as hysterical manifestations similar to those found in the "medium" of the present day.

Side by side with the abnormal phenomenon we invariably find its attempted explanation, because the demand for explanation is a fundamental characteristic of the human mind. Those

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phenomena from the above-cited ancient records were regarded as the manifestations of some spiritual being, god or demon, who either actually inhabited the body of his victim; or, who merely played upon him from without. If the phenomena manifested were in harmony with the religious views of the time, it was concluded that the controlling spirit was benign in character, and the individual so possessed was worshiped as an exceptionally holy person. If, on the other hand, the individual's conduct conflicted with the dominating ethical code, he was thought to be the victim of a malignant devil. So long as this view was generally accepted, it was natural that the curative treatment in force was with the employment of religious ceremonials and incantations and the most appalling persecutions.

With the coming of Hippocrates, however, somewhere about the year 460 B. C., the conception of mental disease in Greece underwent a radical change. Hippocrates, the father of medicine, laid down the principle that the brain was the organ of the mind, and that mental disease was merely the result of some disturbance in this organ. He "led his patients out of the temple of Æsculapius and proceeded to treat them along the lines of ordinary medicine." This is spoken of as the first "physiological conception" of mental disorders.

This brief sketch of ancient history and the early view of Hippocrates, gives us an adequate idea, in the former case, of remote fallacies regarding mental disease, and in the latter instance an attempt to attack mental disease by the method of science, which, as we know, along with general medicine, did not meet with fruitful development and disappeared altogether in the intellectual stagnation of the Dark Ages.

The "demonological conception" of mental disorders as held by the ancients existed well up into the Middle Ages, only to be replaced by "witchcraft," which persisted even into the eighteenth century with a firm hold upon the nations of Europe. Finally, modern Europe attained to that stage which Hippocrates had reached more than a thousand years before. Abnormal mental phenomena were thought to be manifestations of processes taking place in the brain, and the principle was laid down that a mental disturbance was a disease of the brain, just as pneumonia was a disease of the lungs.

Those mentally ill were no longer regarded as the peculiar

property of the devil, though it was thought they had no claim upon the consideration of society. So long as the madman was prevented from troubling his fellow-men, the community felt that every duty had been discharged. This was the epoch of dungeons and chains and might be termed the "political conception" of mental disorders.

In the minds of many medical men the last named conception is the one generally believed to exist to-day in our State hospitals, but fortunately, except in a few states, these conditions have been changed. Science and humanitarianism have slowly advanced to that stage where we find our modern State hospitals, and psychiatric wards in our general hospitals. From the humanitarian standpoint, the level of our general hospitals has been attained, and from the scientific side has been constituted that branch of science known as psychiatry, a study which has undergone a great development in recent years. There remains, however, a broad field for work in psychiatry, as there is in the other branches of medicine, and it cannot be reduced to the simple study of those mentally disturbed and the manifestations of these people. It must get back of these manifestations and seek to discover their cerebral mechanism, and it must, therefore, know the mechanism of the normal brain in all its aspects, anatomical, physiological, and psychological.

Why psychiatry has not developed more rapidly and at least kept abreast of the other special branches of medical science, each one of us could, no doubt, advance some idea. It has, in no small degree, been due to the fallacies attached to it, and the lack of education of the laity, as is done in other branches of medicine, as well as the lack of education of the medical profession. Our profession has always given first aid to the sick and injured, so why, then, should this type of sickness be passed by with so little interest and have it remain in the "political conception" age where it was at the beginning of the nineteenth century?

Sylvius, after whom the cerebral fissure is named, declared in 1620 that "the physician who cannot treat the diseases of the mind is no physician." Many practitioners unduly ignore this branch of practise and perhaps some are like the physician in Macbeth, who promptly declared, when he had witnessed Lady Macbeth's plight:

"This disease is beyond my practice. More needs she the divine, than the physician. . . . Therein the patient must minister to himself. . . . Were I from Dunsinane away and clear, profit again would hardly draw me here."

Every physician should make it a part of his profession to inform himself along certain psychiatric lines. There is very great need of professional enlightenment in this domain of medicine, particularly in the prophylactic sphere. The clinical phases of beginning psychoses need to be understood, so that our patients may have the benefit of early treatment, and perhaps prevent the more serious crash which so often follows. When a psychosis does develop we should be able to recognize the condition frankly as a mental disease, and know how to act accordingly without applying the—now almost obsolete—terms of "nervous breakdown," "neurasthenia,' and so on, in too many instances to be given a "rest cure."

Mental disorders have been looked upon as being the most grievous malady to be inflicted on mankind. Unable to observe accurately, or to reason correctly, the mentally disturbed individuals narrow, ego-centric world quickly alienates him from his normal associations and interrupts habitual lines of conduct. The resulting aimless, erratic or hazardous manifestations have brought upon him antagonism, conflict with the laws and, too infrequently, ostracism from society. As if this were not enough in itself, it has been invested in the public mind with many needless terrors and misconceptions because of the extreme popular ignorance that prevails regarding its nature and consequences.

The general practitioner, owing to his personal relationship with the laity, can best help to dispel these erroneous ideas.

It is generally understood, by those people who have not informed themselves of the true situation, that mental disorders are increasing rapidly, and if we consider only the great accumulation of these patients in our hospitals, it is a natural conclusion. Many factors contribute towards this seeming increase, chief among which is the fact that only few patients die from their mental disorder, therefore, it happens that a far smaller number are discharged each year from our hospitals or die there than are admitted, and the result is a steady accumulation. A great number of the patients received are already chronic and incurable cases before they are "fit for the asylum." More mental disorders are now recognized as such and hospitals have im-

proved in their care and treatment, so that these patients live longer and the mortality rate is decreased, also the public look upon these hospitals more favorably and in many instances go voluntarily for treatment.

The growing practise of placing those dependents suffering with mental disorders under State care has led to the transfer of many patients to State hospitals from almshouses, jails and the like, who, though long-suffering with mental disease, had not up to that time been so registered. The great growth of apartment and "flat life" in the late years has, it is thought, had no small share in increasing the number of public patients of this type, because families living in such close quarters have neither the accommodations nor the privacy for retaining in their homes members of their families who are mentally afflicted. The epileptic, feeble-minded, and criminal classes have in recent years helped to increase the vast number of reported cases of mental disorders, who, heretofore, were kept at home or in other institutions. There have also been more complete statistics of the existing number of such patients to swell the reported number of cases.

These facts show plainly that the increase in the number of patients in these institutions is by no means a true index for the reported alarming increase of mental disease in the community, but really indicate the frequency with which people nowadays resort to hospitals for mental disorders.

It is, of course, possible that more precise data and more systematic and uniform classification based upon better knowledge and statistics might modify somewhat the conclusion stated, but under present conditions there is certainly little to warrant the popular—and in some instances the professional—alarm that has been felt for some time over the terrible and incalculable increase of mental disorders that is supposed to exist.

Among the most prevalent mistaken ideas concerning mental disorders are the etiological factors. It is a common belief that a single circumstance, as shock, accident or habit, is the sole cause. On the contrary, a number, "a conspiracy of causes," have been at work in most cases. Disease inheritance, emotional strain, especially anxiety and domestic troubles, misunderstandings, hardships, exhaustion from physical diseases, poor nutrition, alcohol, mental conflicts in the sexual, environmental and

other spheres, combine in varying number and degree to produce the attack. Overwork, fright and trauma to the head are popularly understood to be a not infrequent cause of mental disorder, but rarely are mental disorders found to originate from these causes. Among women, especially, is a mistaken belief that the menopause is the principal cause of mental disorder. Mental disease is, to be sure, particularly prevalent about this age, but not more so in women than in men, which means we should look deeper before ascribing to a single local physiological condition the importance of the entire upheaval.

Formerly, when less was known regarding the pathology of mental disease, the physician too often confounded cause with effect, thereby spreading false impressions among the laity. A notable example of this tendency was the very general belief, which is still largely prevalent, that solitary sexual practises were directly responsible for mental disturbances in youth as a general rule, whereas the truth is that this habit, when appearing in connection with a mental disturbance, is far oftener a symptom or result, than a cause of the mental trouble.

Chief among the mental disorders arising from a single cause is general paralysis; without syphilis it cannot occur. Alcohol alone frequently produces a special form of mental disorder; in fact, alcohol and syphilis account for a large per cent of the admissions to our hospitals for mental disorders. Other toxic conditions associated with typhoid fever, tuberculosis, scarlet fever, childbirth, and so on, may be the sole cause for mental disease, in many instances, however, we will find another patient going through the same disease, without psychotic symptoms.

Faulty inheritance is such a potent element in mental disease that many people believe these disorders to be always inherited from antecedents. It is surprising how general this belief is. One may inherit a greater or less tendency toward mental disorder, this mental instability may be inherited, just as weak physical constitutions may be inherited, as is the case in tuberculosis. But with tuberculosis there must be other factors than heredity to bring on disease; such is the case with mental disorder. What is inherited is not the mental disorder itself, but rather an unstable mental constitution. These tendencies towards mental disease may lie dormant during the whole lives of these individuals, but such persons should have proper advice

to prevent the further development of this abnormal condition. As a weak physical constitution may be built up by healthful diet, exercise, and so on, so may mental instability be diminished by good mental and physical habits. One who comes into the world so constituted is unfortunate, but not necessarily doomed to a mental disorder. It is a well-known fact that we give considerable thought to our physical health while little attention is paid to mental hygiene.

It has been well said that most people develop mental disease because they are forced to face a situation that is too hard for them.

Undoubtedly, a too fatalistic attitude is assumed towards the prospect of recovery from mental disorders. In fact, a surprisingly large number of people still think that those mentally disturbed never get well, and look upon them as a class with the motto, "Once insane, always insane." This is a grave misconception. Various hospital statistics show that twenty to twenty-five per cent. of the admissions recover and are discharged without further attacks, also that another 20 per cent. recover or so improve that they are able to remain at home for varying lengths of time, from a few months to ten or twenty years, during which time many of these individuals have lived in all the enjoyments of social life. These statistics are open to the great objection that they represent only hospital cases which are most likely to be of the severe, difficult and incurable variety. They cover, therefore, but part of the ground, and a much different idea of the prospect of cure would prevail if the undoubtedly large number of cases, chiefly depressions, which recover without going to a hospital or even to a physician, could be included. There are a large number of cases, a fair proportion of which are presumably of the more mild and curable forms of mental disorders, which are cured in private sanitariums or at home. These cases are not registered in the recovery column, which undoubtedly lowers the percentage of registered recoveries, but the cases that do not recover are finally sent to the State hospitals, thus further lowering the percentage of recoveries.

It is surprising how many people there are who think that mental disorders are all one thing—"insanity." Physicians, also, are inclined to look upon this branch of medicine in terms of "mania," "melancholia," "dementia," and "idiocy," as covering

the whole field, when in reality it has, like other branches of medical science, fairly distinct forms and varieties, each having in the main its own clear-cut diagnostic symptoms.

It is still quite generally believed that there are large numbers of highly disturbed and turbulent patients, or "raving maniacs," in our institutions. This is a remnant of the old opinion that mental disorder always meant an entire dethronement of reason and self-control and consequent frenzy. It will surprise anyone who may still hold such a belief to know that a number of the hospitals for mental disorders are known as "non-restraint" hospitals, meaning that restraint of any form is not used at any time, and it is a rare occasion in these hospitals that as many as five patients, out of a population perhaps of 1500 to 2000, are locked in rooms any one day.

People, generally, have always held in their memory one or two characters seen in life or in hospitals, as examples of the mentally disturbed "class."

State hospitals for mental disorders are medical problems. The days of the custodian have passed, except in very rare instances. So long as the "political conception" of mental disorders exists in these institutions—which was the accepted belief hundreds of years ago—just so long will they be custodial places, and those mentally disturbed will linger in jails, be brought to our hospitals handcuffed by a sheriff, to be received by an ex-police chief in the capacity of supervisor in the hospital, and otherwise be treated as criminals, from which they differ little, so far as concerns the laws of our State. There are numbers of these unfortunates who realize their condition, and when confronted with their situation, in a truthful way, would go to the hospital voluntarily, without being humiliated by going through the needless legal entanglements of ancient laws. When these hospitals are put on a medical basis, they are going to not only be centers for curative activity and psychiatric information, but centers for the distribution of that information, differing in no small degree from the hospital staff, too often now found, who are there to tide themselves over into general practise or to learn surgery. The hospitals to-day have ceased to be mere State boarding-houses, and their activities are not confined to the limits of the hospital by any means. It is incumbent upon these hos-

pitals to have an efficient medical staff, capable and ambitious, who not only are able to visit the wards and prescribe for intercurrent affections among the patients, but who are well trained in psychiatry, and keeping abreast of current developments, and capable of engaging in research work of a high character. Well-equipped laboratories for clinical, as well as anatomical work, are essential and the medical staff should be given opportunities and the stimulus by their superintendents to engage in this work.

It is obvious to anyone that the criterion of efficiency should not be how cheaply we can care for these patients, but how efficient is the care they are receiving, and how efficient is the organization to cope with problems of prevention rather than mere temporary maintenance. It is far better for the State to spend money in investigation, with an aim toward prevention, than to pay out large increasing sums annually for maintenance.

Few people realize the importance of mental hygiene, as, for instance, compared to the prophylaxis of tuberculosis. Much work and study are now being directed against pellagra and other public health questions, but the question is largely at a standstill with many of us as to: What is to be done about this continuous large host of unfortunates—the so-called insane? We can at least support this new movement of mental hygiene and in this way, among other things, strive to remedy those existing conditions which we know are not in keeping with advances made along those lines elsewhere, and in so doing we will at least remove many of those fallacies which exist to-day, and about which you have heard only a small part in this discourse.

We must keep our minds plastic and at all times be ready to receive, at whatever cost to old and cherished beliefs, the new ideas and the new methods and manners of treatment, which progress has established as worthy of consideration. "Wrong convictions, like out-of-date guns, are a source of danger, and must be relegated to the mental scrapheap." Readjustments are necessary, and a resurvey of experience is imperative from time to time if we expect to progress. Advancement never can be final; new order of things must ensue, and no one way of doing things can forever prevail.

(Note—The brief historical sketch at the beginning of this paper is from Bernard Hart's "Psychology of Insanity." Cambridge Press.)

II.

REMARKS ON THE CAUSES AND PATHOLOGY OF INSANITY.

By E. M. HUMMEL, M. D., New Orleans, La.

It is of little or no consequence to assert that insanity is most frequently hereditary in causation, for this is a well-proven but a barren fact. What we wish very much more to know is what originally caused the psychopathic heredity, when did such a strain originate, and how it was fostered and augmented until it reached expression as an insanity. To do this attention must not be confined to one individual so affected or to one generation, but where possible the inquiry must extend to remote antecedents. For many reasons adequate search into remote heredity is difficult, if not impossible, and looking backward in the heredity is less profitable than looking forward. By this I mean that if the influence starting the hereditary affection can be settled upon and avoided, the future prevention of hereditary insanity might be hoped for. Doubtless many trivial things figure in the origin of psychopathic strain, things which do not palpably injure the individual to whom they occur, but which impair his ability to procreate sound offspring, and which must operate through several generations to become potent. Again, when the psychopathic strain has taken origin the chances of its subsequent expression are conditioned by the sort of heredity contributed by the opposite parent. Qualities from a well-endowed parent tend to offset a psychopathic strain, but too often the heredity is convergent, both parents contributing a quota. Incidentally, this is the eugenic objection to even remotely consanguineous marriages.

The psychoses which are predominantly hereditary are to a similar extent beyond the possibility of medical aid and recovery, but are of great interest in that they assist in the study of the evolution of insanity and further throw a great many sidelights on the complex question of normal human character and mind. Paranoia shades off so imperceptibly into insanity as to raise constantly the unanswerable question as to what constitutes sanity and what insanity, or at least where the line of demarkation between the two may be established. The querulent, misanthropic, fault-finding, criticising person always with us is often sane on investigation, yet at the time he is potentially a paranoiac, though his paranoia is concealed. He is destined at any rate to

become a frank paranoiac later when his faults and defects have become so overt as to compel the recognition of his abnormality.

As an observer of insanity, I believe that certain modes of thought and mental attitude towards the things of prime and instinctive interests to human beings may lead to marked mental bias and actual insanity. It is certainly true that such things are very influential in shaping the personality. Eccentricities of mind often amount to talent and genius and it is evident that the race would be hampered seriously in progress were it not for these superior mental misfits and dissenters from conventional thought. Eccentrics are always born as such, and they are of all people the least amenable to environmental influence, hence originality is often their conspicuous trait. Whatever the material peculiarities in cerebral structure obtaining in paranoia and the allied psychoses of hereditary origin, such anomalies in the organization of the brain will most probably forever remain beyond the ken of neuropathologists. In this connection the question naturally arises, can insanity exist in the presence of a normal, well-developed brain. Possibly the milder psychoses or psychoneuroses do occur under such conditions, especially where mental complexes of strong emotional value are enlisted. We should also remember that the cerebrum is a sort of clearing house for stimuli arriving from every tissue in the organism and from the exterior to which suitable response must be made. Certainly minor disorders of interplay may occur in this function of the brain even with normal structure. Also, as expressed later, it is the writer's impression that some psychoses apparently arise from lesions and disorders occurring in the lower levels of the nervous system.

Whereas we know that the neuroses express themselves as such in one person and as insanity in his descendants, we are reminded how comparatively trivial causes may eventuate in the development of insanity proper. Freud and other neurologists have recently shown that hysteria is often of purely psychogenic origin. Hysteria is merely one of the neuroses arising out of anomalies in the mental life of an individual and which might be the basis of psychopathic strain in subsequent generations. In this way we are likewise reminded of the importance of many seemingly unimportant events in the emotional life, many indulgences and habits which, though slight or negligible in their

influence on the first person they are brought to bear upon, are later potent in the causation of mental bias or disorder. The blighting effects of acute infectious disease on the nervous system are often considerable and should be thought of in this connection. This is the sort of looking forward in the study of heredity that should prove useful and of help in ridding psychiatry of the pessimism and stagnation of medical interest it has so long been hindered by. Within the last fifty years so many contrivances have been improvised for the saving of time and the curtailing of distance as to now make it possible for an individual to cram into one lifetime infinitely more experience than was formerly the case. These conditions have developed so rapidly as to scarcely allow physiological adaption on the part of the nervous organism, and consideration of such things may furnish additional clues as to why the race has become more psychopathic, which it certainly has. The same provisions, while putting an additional strain on the nervous system, take away the necessity for muscular exercise and training, and thus the balancing influence of muscular tone and development is to a certain extent lost. Similar contrivances also make it possible for people living in large cities to be free from the normal regulating influences of light and darkness on habits of rest and activity with perhaps similar consequences. The use of the milder stimulants to overcome the normal sense of fatigue which is nature's demand for rest and recuperation undoubtedly leads often to gradual exhaustion of the nervous system and the inception of such nervous conditions as neurasthenia. Though imbalance of nervous energy and nutrition is difficult to induce, it is more difficult to recover from. The same observation applies to the unsanitary conditions under which people live in large cities which, while accompanied by many advantages, are nevertheless effective in inducing neuroses.

Alcohol has been justly blamed for mental inefficiency, deficiency and derangement in the user of it, but the psychopathic strain which he transmits to his offspring is its worst effect. Epilepsy, idiocy and degeneracy are some of the contributions of alcohol under the latter circumstances.

It is merely the citation of well-established clinical facts to say that those bodily diseases that primarily or secondarily attack the nervous system often furnish the cause and pathology of

insanity. Apropos, it must be kept in mind that organic lesions of the cerebrum must be diffuse or widely distributed before they will cause mental symptoms, for the reason that mentalization is sustained by numerous widely separated structures in the brain and for the reason that the two hemispheres are seemingly to some extent interactive and compensatory in function. Even so, we are often struck with surprise as to how much damage the brain will sustain before mental dissolution will occur. I am also convinced that abnormal conditions in the lower levels of the nervous system, and even in the sympathetic system, will and do often influence or condition mind through derangement of the vegetative functions. The milder psychoses such as the anxiety states, nervosity, impulsive and imperative conditions and sexual psychopathia are probably excited in this manner, especially if associated with some obliquity in brain organization.

Syphilis contributes the great majority of the organic insanities, reaching, as it does, the cerebrum by (1) the arterial tree, setting up endarteritis resulting in narrowing and obstruction of the vessel lumen and leading first to cerebral anemia and finally to softening or arterial rupture with the incidence of multiple foci of disease and consequent dementia; (2) by the formation of exudative processes in the brain with similar results; and (3) by causing primary degenerations in the brain and cord presumably as the result of the prolonged presence in the body of luetic toxins with their depressing effect. Paresis and taboparesis are of the latter class and their frequency is notorious. Hereditary syphilis is frequently the cause of deficiencies and defects leading to epilepsy, idiocy, etc., even where active syphilitic lesions never become apparent.

Huntington's chorea, multiple sclerosis, tumors and abscesses, cortical gliosis and atrophy from senile and arterial changes, and severe trauma to the head are some of the other examples of organic disease which are dementing in their effects. Of course, the location of organic lesions in the brain determines to a large extent their mental effects, disturbances in the frontal lobes being more productive in this respect. Regarding head trauma it has often occurred to me in the observation of such cases that insanity is much more apt to ensue where the auditory structures have been invaded by a line of skull fracture. In such instances auditory hallucinatory phenomena and subjective head noises

seem to occasion, or at least greatly influence, the development of mental symptoms. The same may be said regarding symptoms attributable to disturbances of the function of the semicircular canals, as most of these cases are very sensitive to movements and certain positions of the head.

Toxic or noxious agents circulating in the blood or lymph currents are notoriously productive of mental disturbances manifestly because the whole cerebral mechanism is brought under their influence at once. Of all the psychoses, toxic and exhaustive processes carry the least assumption of inferiority or bias in cerebral development, though it is well known that psychopaths succumb to intoxication more quickly and completely than those better endowed. Nevertheless, the toxic psychoses are the most susceptible of remedy. We should consequently be most diligent in searching for the possibility of toxicity, not forgetting that such agencies are not always extraneous in origin but often endogenous, in the latter instance arising from morbid conditions of the viscera, in some one or several of the ductless glands, or even from disorder in the intestinal canal. It seems not improbable that dementia precox is at least primarily a toxic affair arising out of some not-yet-understood imbalance in the body chemistry originating in the ductless glands which are springing into new or increased activity at the time of its incidence. An analogous assumption might be applied to those neurotic and psychopathic manifestations peculiar to periods marking evolution and involution of the sexual attributes The puerperal psychoses are obviously toxic in character, but they are singular in their expression, occasioning the observation on the part of clinicians that they are caused by a peculiar perversion in the secretions of the sexual glands. The deliria of the toxic psychoses, of course, have no more pathology than must be assumed as the direct effect of the toxins on the cerebral neurones, and such effects are readily resolved when the toxin has abated, as it is in acute manifestations. When, however, toxicity is prolonged, as is apparently the case in dementia precox, and certainly so in chronic alcoholism, permanent changes occur, resulting in organic dementia.

III.

THE DIAGNOSIS OF EARLY GENERAL PARESIS.

By HENRY DASPIT, M. D., New Orleans, La.

To you as general practitioners or those who may be engaged in work not neurological in character, I make an appeal to be ever watchful for early general paresis. It is particularly important that you who are engaged in the great clearing-house of internal medicine should be able to recognize or at least suspect such states, for as a rule when the case finally passes into the hands of the psychiatrist deterioration is usually far advanced and the problem is no longer that of therapy. Not that I advance any opinion as to the definite curability of incipient paresis, but I would say that at this stage only are we justified in anticipating any favorable result from treatment. Another phase of importance is that upon the abnormal acts of the incipient paretic depend legal measures, almost always of a domestic nature, but frequently as well in business. The greatest difficulty, even with those who are well trained in the work, arises during the early stages, when the mental as well as the physical symptoms are very indefinite. As a broad general rule it is wise to suspect paresis when a mental disorder begins in the thirties or forties without apparent cause. This is especially so in the case of men.

Frequently a patient who has been active in the business world comes, or most often is brought, showing a peculiar neurasthenoid complex with alterations in personality. There may or may not be speech defects and pupillary disturbances, which, if present, show that the disease is relatively advanced. The only means at our disposal to confirm or refute our suspicions at this stage is the assistance of the serologist. Now whether we accept paresis as directly luetic or a grave metabolic disturbance on a syphilitic basis, with the brain symptoms predominating, is of no moment, as we never reach a positive conclusion that paresis exists unless there is evidence of lues. Let me caution you in this matter. The presence of a positive Wassermann reaction in the blood serum means nothing more than that lues exists and gives us no information as to conditions in the central nervous system. The examination of the cerebro-spinal fluid is all important and should be routine in doubtful cases, as diagnostic lumbar puncture offers little risk to the patient and is, as a rule.

exceptionally well borne by the paretic. The intra-spinal pressure is usually found to be high, ranging from 150 mm. (normal 40 to 70 mm.). If, besides a definite cell increase with a predominance of the plasma cells over the lymphocytes, there is a globulin and serum albumin increase, paresis is most likely. The most important finding is the complement fixation. Positive findings practically assure the diagnosis with certain reservations being made as to cerebro-spinal syphilis. The results in the fluid may all be positive and the clinical picture that of paresis with a negative reaction in the blood serum. This is so frequently observed as to render the examination of the blood serum, when done alone, practically useless. So, when there is any suspicion of the disease, seek the aid of a competent serologist. The information is essential; it is your duty to the patient. The association with tabes need not be gone into except to remark that mental deterioration developing on a tabetic basis is paretic, usually without exception.

The patient will, in addition to the neurasthenoid state noted, often complain of a headache or feeling of fullness, more marked in the frontal region; occasionally a hemicrania. Paresthetic disturbances and leg pain are noted, but in the early stages most frequently form part of the picture of tabo-paresis.

Many patients will give a history of syphilitic infection occurring anywhere from five to fifteen, or even twenty years previously, while a very large number will have no knowledge of being specific when such is the case. Syphilis is so prevalent that it should be suspected irrespective of the sex or social position. Let me digress and caution you as to the common incorrect impression as to the malignancy of the disease. Remember always that there is no mild syphilitic infection, irrespective of what the clinical picture may be. It is from this very class of cases that many of the paretics are recruited and principally due to a laxity in early treatment. Treat all syphilis aggressively.

Broadly speaking and without regard to its many forms, the onset of paresis is very gradual. In addition to what has been previously noted we would say that the first deflection is noted in the intellectual sphere and, as in other dementing processes, the memory for recent events is primarily affected. There is a mental slowing up and the patient often becomes lost in familiar surroundings. The altered personality is most often demonstrated

in irritability and changed reaction toward family and friends, neglect of business, lack of attention to personal appearance and inability to carry on customary routine work. The patient, whom I should previously have remarked is in the mid thirties or forties, may be noted to frequently become drowsy and sleep during meals or when being spoken to. A certain confusion or clouding of consciousness not unlike mild alcoholic intoxication is present in many cases. Not infrequently the patient appreciates his gradual failing, feels ill and goes from one physician to another, and it is at this stage that the condition is most often mistaken for a functional neurosis.

Tremor of the protruded tongue and extended fingers may occur in early cases. We can only mention the fact that, although observed later, alteration in handwriting may take place in the beginning of the disease. In the same position come the "paralytic facies." This mask-like, "morning after" look has been reported in many early cases, but should not be expected as routine. The disease may be ushered in by a transient attack of aphasia or rapidly disappearing paralysis (monoplegias, hemiplegias, paresis of the ocular muscles). Reflex immobility of the pupils and slowness in the reaction to light occurs with fair frequence, but care should be exercised in drawing any conclusion from a slowing. This pupillary fixation should not be regarded as in any way peculiar to paresis, but as one of the many cogs in the wheel. It merely means an affection of the central nervous system by lues; it is in no way inconsistent with mental health, as it is met with in tabes and transiently in alcoholic effects. Irregularity in the pupillary outline is important and has the same significance as fixed pupils, inequality to a less extent. The tendon reflexes may be absent or exaggerated with the usual associate signs. Here the findings may be mixed, as there is frequently combined disease of the posterior and lateral columns of the cord as a part of the paresis. The association with locomotor ataxia must always be kept in mind, with its train of subjective symptoms. The early erethism, to be followed in a short time by the loss of all sexual power, is one of the many things that may bring the patient under medical observation, and in such defects occurring in middle life great care must be exercised before paresis is ruled out. The gross errors in conduct and the

marked memory defect can hardly be regarded as early signs, and usually, though they may be the first things which call the attention of the family to the existence of the disease, deterioration has been present for some time.

As the mental symptoms outlined may occur in any of the organic dementias, it is never safe to make a diagnosis on this alone. The serological findings and physical signs are essential to complete the picture.

Time precludes considering the differentiation from other psychoses, but a word may be said as to the distinction which may be drawn between this condition and neurasthenia, with which it is most frequently confused. Only a few general points will be mentioned. The paretic has little or most often no insight into his condition, while the other appreciates well his disability and exaggerates. The fact that the functional case improves with rest is noteworthy. The errors of the paretic go unnoticed and uncorrected, while in the neurasthenic these are usually recognized and corrected at once. The memory defect complained of by the neurasthenic will on careful observation be found not real and changing from day to day, while in the paretic there is a distinctly definite time element and the defect is always gradually progressive. The cheerfulness in the paretic in the early morning hours and his depreciation during the day is quite in distinction to the neurotic, who awakes in the dums and complaining, only to brighten as the day advances. Lastly the physical signs met with should avoid great confusion.

When all is said the fact remains that paresis in its incipiency offers great difficulty in diagnosis, even at the hands of those well trained in psychiatry. This should not deter you from a careful consideration of the question, as by some attention you will learn to properly weigh suspected cases and thus be able to offer them therapy at the only time when such will be of any real avail. Though treatment is foreign to this paper, I would say: Use every means that has been placed at your disposal. We are yet far from the ideal, but we have seen that the disease can be decidedly affected and at least altered, which opens to us the hope that some day we will prove its master.

THREE PROCEDURES OF ASSISTANCE IN GYNECOLOGICAL TECHNIC.

By H. W. KOSTMAYER, A. B., M. D., New Orleans, La.

The procedures herein described are very simple and effective, yet I rarely see them employed except by my associates in the Department of Gynecology of Tulane.

It is for this reason that I bring them before you.

The first is a method of suturing the amputated cervix—a suture often used in other situations, and which often markedly facilitates approximation of the surfaces.

Pulling forward the outer mucosa with tissue forceps, a needle carrying a long suture is passed through the cervix, not less than a half inch from the line of incision, and brought out into the cervical canal. The needle is now passed through the very edge of the outer mucosa and then through the edge of the mucosa of the cervical canal. When tied, it brings about a certain and well-enforced approximation of the desired surfaces.

The second procedure applies to making a median abdominal section. When the knife incises the abdominal fascia, or external sheath of the recti, it cuts to one or the other side of the median fibrous septum between the recti, in the vast majority of cases. If, now, the divided edges of the sheath are alternately picked up with tissue forceps, and pulled on, the one toward the median line will be found unyielding, as it is bound down by the median septum, while the other, the one over the rectus, whose sheath has been opened, will freely strip off of the underlying muscle. In the rare cases where the median septum is bisected, this is of no avail.

The third procedure is a combination of well-known technics, used to make a peritoneal toilet and hold the uterus forward in cases where removal of one tube, or a tube and ovary on the same side, has been found necessary.

Everyone is doubtless familiar with Norris' utilization of the round ligaments in bilateral salpingectomy, and also with the Baldy-Webster method of round ligament suspension.

The procedure in question is merely the balancing of a Norris suspension on the side from which the adnexa have been removed by a Baldy-Webster on the sound side. On the one side the round ligament is carried over the top of the broad ligament,

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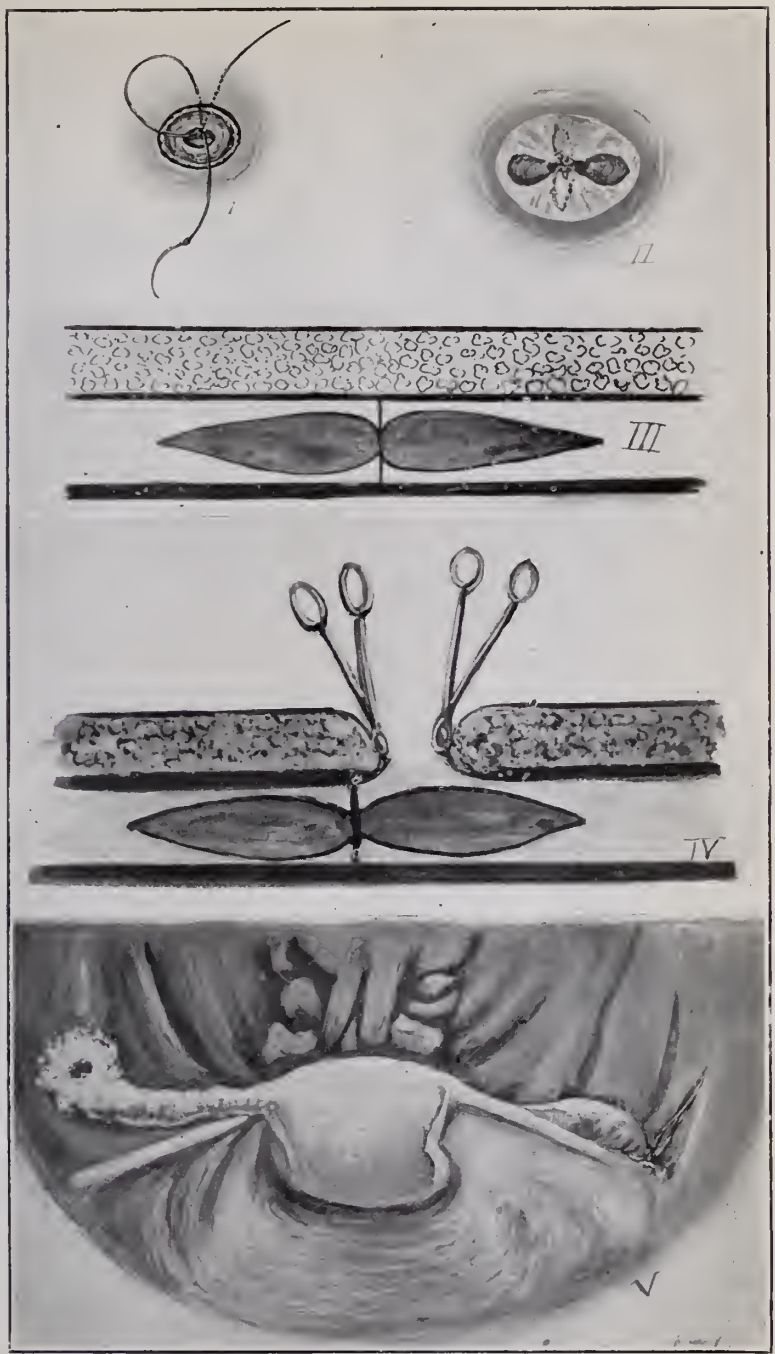

I. Suture passed through cervix. II. Sutures tied.
III. Schematic section of abdominal wall in median line.
IV. Abdominal wall incised. Fixed edge of fascia indicates median line.
V. Combined Norris and Baldy-Webster suspension of uterus.

ILLUSTRATING DR. KOSTMAYER'S ARTICLE.

from which the tube has been removed, and is tacked to the posterior surface of the uterus, a little below the level of its anterior (normal) attachment. The portion between its original and its new attachment is sutured over the excised cornu of the uterus.

On the sound side the round ligament is drawn through the broad ligament under the tube and utero-ovarian ligament to the posterior surface of the uterus, and sutured there opposite its fellow.

The accompanying illustrations will help to make the ideas clear.

A CASE OF PURPURA HEMORRHAGICA SIMPLEX TREATED WITH EMETINE HYDROCHLORID.

By JAMES C. COLE, M. D.,

Instructor in the Laboratory of Clinical Medicine, Tulane University, Visiting Physician, Charity Hospital,

And PERCY L. QUERENS, M. D., Charity Hospital.

Owing to the recent reports demonstrating the hemostatic properties of emetin hydrochlorid in pulmonary and other obscure hemorrhage, its effect was tried upon the following case:

Alexander L., a farmer, aged 52 years, entered the Charity Hospital September 11, 1915, complaining of bleeding from the gums and reddish-blue spots on the body. His family history was negative for tuberculosis, malignancy, and hemophilia. His past history was negative except for a "continued fever" probably typhoid at the age of twelve years. His habits were those of a moderate drinker, used coffee regularly, and had smoked and chewed tobacco for the past thirty years. He denied all venereal history.

His present illness began on the Monday before admission to the hospital September 7. He stated that, while working in the field about 3 o'clock in the afternoon, the sun being very hot, he suddenly felt dizzy, but did not fall or become unconscious. He discontinued his work and returned home; that night he felt overheated and thinks he had some fever, not using a thermometer.

The next morning he noticed a small red spot on the left shoulder about the size of a ten cent piece, but paid no attention to it. The same morning took a dose of magnesium sulphate and felt better in the evening, as also on Wednesday and Thursday.

Friday morning, on arising from bed, he noticed that the gums at the margin of the superior incisor teeth were red and a small amount of blood was oozing from them. Applying cotton to the area failed to relieve, so he immediately consulted the dentist in the neighborhood who scraped the teeth. The bleeding continued and soon there began to appear small spots on the right forearm about the size of a white bean and which turned reddish blue by midday. Satur-

day, on returning to the dentist, the teeth were scraped again and an astringent probably applied (patient did not know nature of drug.) Gums continued bleeding more freely throughout the day and spots began to appear very rapidly on the chest, abdomen, and thighs, and small spots, resembling mosquito bites, on the arms and legs.

Physical examination at entrance showed a well developed and moderately nourished male adult, about 5½ feet in height and weighing about 140 pounds.

The most striking feature was the bleeding from the gingival margins of the superior incisor and bicuspid teeth. The ecchymotic area extended almost to the frenum of the mucous membrane, and the gums were bleeding freely; on having the patient hold his head in position so the blood could drop into a basin the rate was forty drops per minute. The gums on both margins showed an advanced pyorrheal condition. On the right edge of the tongue near the tip there was a small ecchymotic spot the size of a pea. The throat was negative.

The eyes, ears and nose were negative. The reflexes, ocular, both direct and indirect were negative. Romberg's sign, patellar, ankle, and Babinski reflexes were negative. Thre was no glandular enlargement. The chest and abdomen were covered with a large number of bluish-red spots, irregular in shape and ranging in size from that of a twenty-five cent piece to that of a dollar. The arms and thighs were covered with areas of a smaller size, and the forearms and legs contained petechiæ, a pin-head in size and larger. The heart and lungs were negative, and the spleen was not palpable. The upper limit of liver dullness began at the fourth rib and extended to the costal margin in the anterior axillary line; it descended 1½ centimeters on deep inspiration. The abdomen was negative except as already mentioned, likewise the genitalia and lower extremities.

The urine was straw colored, sp. gr. 1020 negative for sugar, albumin and indican. Microscopically there were a few hyalin casts and red blood corpuscles.

Blood picture: Total white blood corpuscles, 10,000; total red blood corpuscles, 4,970,000.

Differential count: Neutrophiles, 69%; lymphocytes, 25%; eosinophiles, 4%; basophiles, 2%.

Definite anisocytosis, and poikilocytosis, hemoglobin (Dare) 65%.

TREATMENT.

As a local application to the gums, glycerite of tannin was tried; no improvement resulted in twenty-four hours, so the drug was discontinued. A 1/1000 solution of adrenalin chlorid was substituted, which seemed to alleviate the condition slightly.

Calcium lactate in the powdered form, fifteen grains every four hours, proved valueless. The following day one-half grain

of emetin hydrochlorid was administered intramuscularly, and almost immediately a hematoma about the size of a small peach formed at the site of puncture in right arm. Eight hours afterwards a similar condition occurred on the left arm, following a second administration. The next day, on repeating the emetin, the results were the same. The patient's condition failed to improve and the ecchymotic areas increased in number and size; the calcium also had been continued.

Intravenous administration of the emetin was begun and one-half grain was given directly from the ampoule, undiluted, into the median basilic vein; only a small ecchymotic spot formed at the site of puncture. Six hours afterwards the injection was repeated, and on the following day improvement was noticed in the gum condition and the failure of any more spots to appear. The drug, same dosage, was repeated twice daily, alternating from right to left arm for each injection. The hemorrhagic areas began to undergo the various colors associated with blood degeneration and no new spots appeared; the patient's general condition began to improve and he claimed that he felt better.

The emetin was continued until ten doses were given, when it was discontinued altogether, owing to the absolute disappearance of all symptoms.

On September 21 the patient left the hospital showing no signs of the original condition and the pyorrhea which was manifest on entrance appeared much improved. After the second day temperature did not rise above 98.4 and the pulse 86.

The urine the day of discharge was light straw in color; sp. gr., 1015; negative for albumin, sugar, indican, and negative microscopically.

The blood: Total white blood cells, 15,000; total red blood cells, 5,500,000; differential—Neut., 70½%; lymph., 25½%; eosin, 4%.

Slight evidence of anisocytosis and poikilocytosis. Hemaglobin, 75% (Dare).

While no attempt is made to consider the emetin as specific in this case, or in any similar case, the beneficial results were quickly realized after the beginning of the intravenous administration, which demonstrates the superiority of this method over its administration bypodermatically.

We express our thanks to Dr. J. B. Elliott, Jr., Professor of Medicine, Tulane University, for the privilege of reporting the case.

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VITAL STATISTICS IN LOUISIANA.

As Collaborating Epidemiologist for Louisiana, Dr. Oscar Dowling, the president of the State Board of Health, has issued an appeal to the members of the medical profession of Louisiana for support in the efforts to secure prompt and accurate morbidity reports and records of births and deaths.

He makes the astounding statement that less than ten per cent. of the physicians return the self-addressed and prepaid reply postcard sent out by Surgeon Von Ezdorf, of the Public Health Service, in trying to secure reports on malaria in Louisiana. This is simply shameful and shows that the urban practitioner is no less blameworthy in this respect than his country colleague.

Records of births and deaths are very incomplete, figures showing that about one-third of the estimated number are reported.

All this shows the grossest indifference on the part of physicians. Ignorance cannot be presented as an excuse, as the subject has been too thoroughly agitated, even in these columns, for it not to be generally known that it is the law to make these reports, that it is of scientific interest to the profession, and that it must redound to the great advantage of the respective communities and of the State.

We wish we could find words of condemnation strong enough to sting the conscience of our brethren and make them resolve to do better hereafter; that is, to do their simple and plain duty.

Such a resolution would be one of the best our doctors could make for the new year.

THE AMERICAN COLLEGE OF SURGEONS.

For the new year, the American College of Surgeons announces, through Mr. John G. Bowman, its director, that it has secured an endowment fund of $500,000 from its Fellows. The income only of this fund is to be used.

The ideals of the College are to find expression mainly along the following lines of activity:

First—The regents propose to present to the undergraduate medical students of this continent a clear conception of the College. The senior students who expect to specialize in surgery will be asked to register with the College and to report their appointment as interns to hospitals or as surgical assistants, the College in turn seeking information as to the ability and character of such men and asking the co-operation of the medical schools and all practitioners.

Second—The College will seek data on all matters which relate to hospitals. It will publish studies upon hospital problems, in order both to be helpful to the hospitals and to inform recent graduates as to where they may seek training in surgery.

Third—The College will ask the medical schools to consider conferring supplementary degrees in surgery and its specialties.

Fourth—The College will issue educational monographs to hospital trustees, to the medical profession, and to the public upon the meaning of fitness to practise surgery.

The impetus of the College originates among the surgeons themselves and its Fellows have made sacrifices for its success.

"THE MILLS OF GOD GRIND SLOWLY."

The Department of Agriculture has recently issued from its bureau of information two important communications, one titled "Fifty Falsely Labeled Medicines;" the other is headed "Seize Substitute Specifics." The former deals with successful actions against fraudulent drugs and medicines, claiming curative or therapeutic effects they did not possess. The latter covers the discovery and check of cheap imitations of well-known preparations peddled to drug stores.

Both are important achievements in state medicine and the people owe the Department of Agriculture much gratitude. The patent medicine business has had a blow, which should signal a further attack, but where these vampires are well entrenched they will probably not surrender until they are likewise wiped out.

It is interesting to read the names of old offenders among those condemned by court action, some familiar in name for a generation.

The accomplished fact of finding these guilty is enough for congratulation, but we are certain that the honesty of the government's precaution is evident in the exhaustive manner in which the investigation of each case was conducted—wherein chemical analyses were complete and where pharmacologic opinion was weighed.

The public will still be humbugged—but if the work of the government goes on, there will surely be fewer humbugs to practise on public credulity.

EUGENICS AND EUTHANASIA.

Some reactionary opinion has arisen on account of the Chicago cases of abnormal infants and non-interference by the surgeon in charge. The ethical phases are still *sub judice,* and it looks as if the doctor is to be the goat. Public opinion, as usual, carries large weight, if less reason, and must be obeyed.

There is a reflex of thought, however, which may trail along sufficiently to make these cases object lessons for the eugenists, who have been rather active in recent years in demanding legislative interference with natural proclivities. Consequently they should organize a rescue party for the rehabilitation of the surgeon who attached considerable notoriety to himself in practising the principles of the cult and in doing it in such an open and public way as to bring on himself professional condemnation.

Eugenics is all right as an evolution, but it evidently is not yet ripe for the plucking or there would have been only one side in the present case; for how much better it is to stop defectives before they begin than afterwards.

Dr. Haiselden declares that

"Chicago does well to ponder. It is a city full of the mentally and physically abnormal. They produce crime and immorality and disease. They propagate profusely and therein lies the tremendous danger. This is no time to grow sentimental over the misfits of the world. Europe in a few years will be crawling with defectives. The abnormal and misfits will be left to repopulate." (N. Y. Medical Journal, Dec. 4, 1915).

Chicago is not singular in these respects. The survey of any child population in any large community will disclose a like finding, and there is room for large education in and out of the medical profession in the ways of prevention. Just because more than ordinary publicity attached to the Chicago incident, the matter has occasioned much talk and some real thought.

The medical profession is indeed organized to save life and to foster it, but, at the same time, the whole trend of modern thought is directed at the prevention of the causes which menace life, and there is now no greater burden carried by humanity than that which has been brought about by defectives who owe their origin to immorality, improvidence and vice. The degree of abnormality in the new born which defines it a monster has not yet been clearly established, either in practise or in law, and until the shades of distinction are drawn we may conclude that a lesson from the squirrels (who destroy their young when defective or maimed) and the Chinese (who have so long drowned the excess in their litters) might be of advantage until exact jurisdiction is established.

Every now and then there is some strong argument made for the voluntary termination of the lives of incurables through easy means of exit, assisted by the physician, and there are many who believe that this practise should prevail. It is a soldier's privilege, and more than one brave animal has been sent to a surcease of suffering by rapid means.

Euthanasia is as yet a dream, and so is eugenics, and both will be, perhaps, until people are fair-minded enough to see that a hopeless life can avail nothing for itself or others, and it were useless to foster it, if the soul of the victim cries for relief.

Miscellany

Tobacco Heart.—According to Brooks' conclusions, the action of tobacco, while occasionally very dangerous, is evanescent.

There is no clinical or experimental evidence that disease of the heart muscle is caused by tobacco, save for possible changes in the papillary muscles, probably explainable on a mechanical basis.

He advises against the use of tobacco in cases of angina pectoris, for the reason that the action of the drug adds to the existence of diseased coronary arteries; its pharmacologic effect, claudication. Clinical experience bears out this restriction.

The advice is that, except in angina pectoris, whether tobacco may or may not be used depends on the effects which its use, not abuse, produce on the individual.—*New York Medical Journal.*

J. A. S.

Treatment of Lobar Pneumonia.—If one agrees that ice is of use in treating pneumonia in adults, there is no question that it has value in treating pneumonia in older children. The prejudice against ice in pneumonia is far from justified. It is used commonly by medical men in treating meningitis, endocarditis, appendicitis and peritonitis. Why, then, should it not be used in pneumonitis? If ice is not useful in the external treatment of pneumonia, what is? Essentially nothing. With the exception of the occasional application of light mustard pastes as an aid to the failing heart, all poultices are of paramount danger. Kaolin pastes used in this disease are not only without therapeutic value, but they are a source of harm and danger. In no acute disease does the question of heart stimulants assume the importance that it does in pneumonic infections, and in no disease likewise is overstimulation so frequently employed.

An old, wornout horse is never whipped, nor is it advisable to whip or overwork a wornout heart. In the treatment of heart complications opium occupies a position that is secondary to no other form of medication. Oxygen, especially in cases in which cyanosis is profound, is of unquestionable value and must be used constantly. Camphor in the form of sterilized oil seems

at times to produce results, and ammonia given as the aromatic spirits also occasionally seem beneficial. If the blood pressure were materially lowered in pneumonia epinephrin should be of value, but it is rarely lowered. Caffein defeats its own purpose, because it overstimulates the nervous symptoms so that the little value that the heart receives is more than counterbalanced by the irritation of the cerebum that follows its use. Strychnin has been proved absolutely valueless. Atropin should be administered to those cases in which there is a tendency to pulmonary edema.—*Archives of Pediatrics.* J. A. S.

Systematic Use of Laxatives in Treatment of Endemic Goiter.—Messerli gives an illustrated description of eleven cases of goiter in young men entering the military service in Switzerland. The father of one and the mother of two others had a goiter, and some of the sisters and one of the brothers had a goiter; only three of the young men had no family history of goiter. Messerli ordered laxatives for all. Small doses were given to maintain a continuous mild purging action to keep the bacterial flora down as much as possible. The results confirm those published by MacCarrison in 1913 and later, and by Gaylord and Plehn, all apparently suggesting that the drinking water had some connection with goiter, and that by mechanically sweeping out the parasites in the drinking water we can reduce the tendency to goiter. The benzonaphthol, thymol, salol, aloes, jalap or rhubarb used may also have a destructive action on the parasites, or, by keeping the ordinary flora down, the already diseased thyroid is spared injury from their toxic products. In one case the neck measured 40 cm. before treatment and only 37.5 cm. after 38 days of the laxatives. The difference in the size of the neck was 2 cm. in the others, except in one in which it was only 1 cm. and in another in which it was 4 cm. In two cases the improvement was obtained with a simple laxative without disinfecting properties, merely aloes, rhubarb and jalap.—*Revue Médicale de la Suisse Romande,* Geneva. *N. Y. Medical Journal.* J. A. S.

Society Proceedings

EAST FELICIANA PARISH SOCIETY.

The regular meeting of the East Feliciana Parish Medical Society was held at Clinton, La., December 1. Those present were Drs. Wall, Lea, Thompson, Singletary, McKneely and Toler. No scientific papers were read, but quite a helpful discussion of clinical cases was indulged in. Officers elected for 1916 are: Dr. W. B. Singletary, president; Dr. J. F. McKneely, vice-president; Dr. E. M. Toler, secretary-treasurer. Delegates to the Louisiana State Medical meeting: Dr. W. D. Wall, with Dr. F. M. Thompson, alternate. The following resolutions were passed:

Whereas, Dr. Thomas Street Norwood, of Norwood, La., died September 17, 1915; and

Whereas, Dr. Norwood was for a number of years a member of this society and served a term as its president; therefore

Be it Resolved, That the East Feliciana Paish Medical Society deeply mourns his loss and tenders its sympathy to his bereaved family. Dr. Norwood was a graduate of the Medical Department of Tulane University in 1906, and although only 34 years of age at the time of his death, by his unassuming modesty, honesty and gentle kindness, he made a favorable and lasting impression upon all with whom he came in contact; and his loving memory will be perpetually engraved upon the hearts of his many grateful and saddened patients. While we cannot understand it, we bow in humble submission to this inscrutable decree of the divine will of the Master, for we know that He doeth all things well.

Be it Further Resolved, That a copy of these resolutions be spread upon our minutes, a copy sent to the family, a copy to the Southern Watchman, and a copy to the **New Orleans Medical and Surgical Journal.**

Respectfully submitted,
W. B. SINGLETARY, M. D., Pres.,
E. M. TOLER, M. D., Secretary.

ST. JOHN-ST. CHARLES BI-PARISH MEDICAL SOCIETY.

The regular quarterly and annual meeting of the St. John-St. Charles Bi-Parish Medical Society was held at Reserve, La., December 1, with the following members present: Drs. J. P. Elmore, president; Louis A. Caboche, R. H. Johnson, S. Montegut and L. Cheves Tebo.

Dr. S. A. Winsor, of St. Rose, was elected to membership at this meeting.

The election of officers followed and resulted in the re-election

of the present incumbents to succeed themselves, viz.: Dr. J. P. Elmore, Edgard, president; Dr. H. D. Cooper, Edgard, vice-president; Dr. L. Cheves Tebo, Reserve, secretary-treasurer, and Dr. S. Montegut, Laplace, delegate.

ORLEANS PARISH MEDICAL SOCIETY.

At the annual election of the Orleans Parish Medical Society, held Saturday, December 11, 1915, the following officers were elected to serve during 1916: President, Dr. Wilkes H. Knolle (re-elected); first vice-president, Dr. J. Phares O'Kelley; second vice-president, Dr. Everard W. Mahler; third vice-president, Dr. M. Thomas Lanaux; secretary, Dr. Charles A. Bahn; treasurer, Dr. Carl A. Weiss; librarian, Dr. Maurice J. Gelpi; members of board, Drs. Allan Eustis, Frank J. Chalaron and Paul T. Talbot. The installation of officers will take place Monday, January 10, 1916.

Medical News Items

Meeting of Tri-State Physicians.—The Tri-State Medical Association of Mississippi, Arkansas and Tennessee held its thirty-second annual meeting in Memphis, November 16-18, under the presidency of Dr. William P. Hicks. The following officers were elected: President, Dr. Arthur G. Hudson, Raines, Tenn.; vice-presidents, Drs. Samuel D. Robinson, Clarksdale, Miss.; Robert E. Bradsher, Marmaduke, Ark., and John W. Morris, Somerville, Tenn.; secretary, Dr. James L. Andrews, Memphis; treasurer, Dr. James A. Vaughan, Memphis.

Interstate Psychiatric Association.—At a meeting of this association, held at the Sheppard and Enoch Pratt Hospital, Baltimore, November 23, the following officers were elected: President, Dr. Henry A. Cotton, Trenton, N. J.; vice-president, Dr. Edward N. Brush, Baltimore, and secretary, Dr. Samuel T. Orton, Philadelphia.

The National Board of Medical Examiners closed its session at the Raleigh Hotel, Washington, November 29, 1915. The association adopted plans by which it is hoped that every state in the Union will eventually recognize the certificate from the National Board as sufficient credentials for the issue of a license to practise medicine. The Medical Corps of three government

services are represented on this board, of which Surgeon-General William Braisted, U. S. Navy, is president, and Colonel Louis A. Lagarde, M. C. U. S. Army, treasurer. Dr. W. L. Rodman, of Philadelphia, is the secretary.

The Conference of Medical Education, Public Health and Legislation will hold its twelfth annual convention at the Congress Hotel, Chicago, February 7 and 8, 1916, under the auspices of the Council on Medical Education and the Council on Health and Public Instruction of the American Medical Association. All state licensing boards, state boards of health, state medical societies, associations of universities, and other organizations interested are invited to send representatives to this conference. On February 8 the Federation of State Medical Boards of the United States and the Association of American Medical Colleges will meet.

The Alpha Omega Alpha Society, Tulane Chapter, held its first open meeting in Hutchinson Memorial Hall, Tulane University of Louisiana, on December 17. The program furnished consisted of "My Malarial Meanderings," by Dr. C. C. Bass; "Experimental Therapy of Pneumococal Infections: a Resumé," by Dr. J. T. Halsey, and "The Doctor's Hat," by Dr. Isadore Dyer.

The Harrison County Medical Association held a meeting in Gulfport, Mississippi, December 4, and elected the following officers: President, Dr. R. A. Strong, Pass Christian; Dr. A. F. Carraway, Gulfport, secretary-treasurer; delegate to the State Medical Association, Dr. B. Z. Welch, Biloxi, with Dr. W. A. Dearman, Long Beach, alternate; Dr. D. J. Williams, Gulfport, censor, and Dr. R. A. Anderson, Gulfport, chairman of the defense committee. A highly appreciated paper was read by Dr. R. A. Van Wart, of New Orleans, on "Insanity and Its Classifications."

The Evans Memorial for Clinical Research wishes to communicate with physicians who have used bacterial vaccins in the treatment of typhoid fever for the purpose of collecting statistics concerning the method as a therapeutic measure. To any who will send their names and addresses, blank forms will be sent upon which uniform reports may be made, due credit being given to each in any reports that may be published. Address all

communications to Dr. W. H. Watters, 80 East Concord Street, Boston, Mass.

Medical Corps of the Navy Examination.—The next examination for appointment in the Medical Corps of the Navy will be held on or about February 23, 1916, in the following cities: Washington, D. C.; Boston, New York, Philadelphia, Norfolk, Charleston, S. C.; Great Lakes (Chicago (Chicago), Mare Island, Cal., and Puget Sound. The appointment is for assistant surgeon in the Medical Reserve Corps. The successful candidate attends the course of instruction at the Naval Medical School, which will begin on or about October 1, 1916, during which course he receives a salary of $2,000 per annum with allowances for quarters, heat and light. If he successfully passes an examination at the end of the course, in the subjects taught in the school, he is commissioned an assistant surgeon in the Navy to fill a vacancy. Only citizens of the United States can apply. For full information address the Surgeon-General of the Navy, Navy Department, Washington, D. C.

The Louisiana State Medical Society will hold its next annual meeting in New Orleans, on April 18, 19 and 20, 1916.

Annuls Marriage for Tuberculosis.—In a recent case before the Supreme Court of New York City, it was decided that the marriage of a person suffering from tuberculosis might be annulled when the existence of the disease has been concealed. The fraud of the defendant in concealing and misrepresenting his health was the legal basis of the decision.

Education Towards Health.—The United States Public Health Service has established a loan library, with stereopticon slides, which can be procured on request of sanitarians, educators and others interested in hygiene and public sanitation. The slides are on all subjects pertaining to disease, the most important of which are diseases of children, hookworm, leprosy, malaria, milk production, mouth hygiene, pellagra, bubonic plague, rural schools, smallpox, tropical diseases, tuberculosis and typhoid fever.

Relief Fund for the Belgian Profession.—The report of the treasurer, Dr. F. F. Simpson, of the committee of the American physicians for the aid of the Belgian profession, shows, for the week ending December 11, 1915, a total disbursement of

$7,310.04 and a balance on hand of $593.80. The total receipts are $7,903.84.

Failure of Twilight Sleep Films.—The Motherhood Educational Society, Inc., in its attempt to educate the New York public in regard to twilight sleep by means of moving pictures, recently ended in the bankruptcy court. It was planned by the society to send the films around the country in charge of a physician from Freiburg, Germany, who was to deliver a lecture during the process of film showing.

Radium Production.—Of the five grams of radium extracted from American ores at the Denver experiment station of the Bureau of Mines, half of it has been delivered to the General Hospital in New York and half to Dr. Howard Kelly's hospital in Baltimore. It is stated that the cost of production of the radium was about $37,000 a gram.

Convalescent Home at Sea Breeze.—A new convalescent home for wage-earners has recently been opened at Sea Breeze, Coney Island, by the New York Association for Improving the Condition of the Poor. The object of the home is to give an opportunity to wage-earners, suffering from sickness, for rest and complete recovery before returning to work.

College Merges.—Plans for the merging of the Medico-Chirurgical College of Philadelphia with the University of Pennsylvania, which action has been under contemplation for a long time, have been completed. It is stated that this college will become a graduate school of the university, which will control its endowment.

Drug Addicts.—According to the statement of Dr. T. D. Crothers, president of the New York Medico-Legal Society, fully 500,000 persons in the United States are addicted to the use of drugs. Dr. Crothers states that the users of drugs are always more or less incompetent and in a large majority of cases they do things eventually that cause injury to others. Accordingly, laws of protection and control should be enforced.

Louisiana State Board of Medical Examiners Examination.—A meeting of the Louisiana State Board of Medical Examiners was held in New Orleans, December 2, 3 and 4, 1915, for the purpose of conducting an examination of physicians desiring to practise medicine in this State. The following members were present: Dr. J. G. Martin, president; Dr. S. L. White,

vice-president; Dr. Leon J. Menville, Dr. Homer Dupuy, and Dr. E. L. Leckert, secretary. Thirty-five physicians were present for examination in medicine, of which number twenty-eight passed and were granted certificates. They are as follows: Nicolo Vincenzo Alessi, Victor Kirkpatrick Allen, Theodore Thomas Batson, Benjamin Charles Blake, Herman Vascoe Collins, Charles Mordecai Conkling, William Jeremiah Devlin, Pressly Young Donald, Louis Joseph Dubos, Guy Henry Faget, Wyatt Ashbury Fleming, Henry Larkins Green, Arthur Britton Gregory, James Barker Harney, Victor Lamar Henton, Leonard Templeton Lane, Charles Robert Miller, Preston Joseph Miller, Reginald St. Elmo Murray, William Oscar Ott, Thomas Jefferson Seale, Covington Hardy Sharp, Lloyd Ellis Talbert, Fred Wentworth Tait, William Barclay Terhune, Joseph Henry Thomas (colored), Charles Kennard Townsend, Allen Grover Zeagler.

During the session, six physicians were granted certificates to practise medicine in Louisiana through reciprocity, namely: William Clark Heinen, Harry W. Lukens, Holly Hicks Parr, Jesse H. S. Scott (colored), Edwin V. Whitaker, John Milton White.

At the midwifery examination, held December 3, eleven applicants were present, of whom six were successful and received certificates to practise in this State. They are: Mrs. Lillian Bagnetto, Mrs. Olivia M. Baquie (colored), Mrs. Glaudine Bendix, Mrs. Marion E. Johnson, Mrs. Alice H. Pierce, Mrs. Josie Rose.

The next meeting of the board to be held for the purpose of examination will take place in this city, June 8, 9 and 10, 1916.

Typhus in Mexico.—According to an Associated Press dispatch recently published, typhus fever, which has been epidemic in and around the City of Mexico, has increased to an alarming extent. The death rate from the disease now exceeds 130 a day and is increasing. It is estimated that in the federal district and neighboring towns there are at present 11,000 cases.

Foot and Mouth Disease Brings Loss.—Up to July 1, 1915, the loss due to the hoof and mouth disease epidemic in the United States has been estimated at $5,600,000. This estimate was made in a paper by A. J. Glover, Fort Atkinson, Wis., on "The Economic Effect of the Hoof and Mouth Disease," which

was read before the conference of state and federal authorities in Chicago, November 29.

Dogs Carriers of Disease.—The Department of Agriculture has issued a bulletin on dogs as carriers of disease. Among the maladies which may be spread by dogs are foot and mouth disease among cattle, of which it is said dogs act as mechanical carriers by running over infected farms; rabies, hydatid, ringworm, favus, tape-worm, round-worm, and tongue-worm. These may be conveyed to human beings. Dogs may aid in spreading bubonic plague and spotted fever through being carriers of fleas and ticks. They may also become infected with various parasites by feeding on carrion.

Tuberculosis Diminishes and Syphilis Spreads in Ontario.—The death rate from tuberculosis in Ontario has dropped from 148 persons per 100,000, which was the rate eleven years ago, to 85 persons per 100,000 in the present year. Syphilis, on the contrary, is spreading so rapidly, according to Dr. Charles J. Clarke, superintendent of the Toronto General Hospital, that radical measures will soon have to be taken in that province.

Sanitation of Public School Buildings.—Forty of the states of the Union have taken legal action toward safeguarding the sanitation of public school buildings. In thirty-eight states there are legal requirements regarding the school site; in nineteen states it is prohibited to have the school building within a specified distance of houses where liquor is sold, or other disreputable resorts or factories; thirty states look to the question of water supply for the schools, and in thirty-six states protection against fire and panic has been provided in some form.

Le Journal de Medecine de Bordeaux issued in November its first number since August, 1914. The journal will be continued as a monthly. The first issue contains a tribute to the twenty medical students at the University of Bordeaux who have fallen in the war. The leading and only original article is a clinical study of 330 cases of typhoid in soldiers.

An "Emergency Plant" to Be Erected.—In response to a demand from Europe for women physicians to take the place of men whose services have been required by their country and in this country for social work, the board of trustees of the New York Medical College and Hospital for Women expects to raise

$200,000 by September 1, 1916. The money will be used to erect what has been called "an emergency plant."

Louisiana's Reciprocity List.—The list of states with which Louisiana reciprocates, under the rules and regulations governing reciprocity, is as follows: Arkansas, California, Colorado, Delaware, District of Columbia, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Pennsylvania, Vermont, Virginia, West Virginia, Wisconsin and Wyoming.

Support Given Southern California Practitioner.—The United States Postal Department indicted the *Southern California Practitioner* because of the publication of an article dealing with the "sex question," which appeared in its issue of March, 1914. The American Medical Editors' Association, at its recent meeting in New York, adopted resolutions giving its confidence and moral support to Dr. George E. Malsbary, editor, in the pending action and assures Dr. Malsbary of its willingness and readiness to afford him any assistance within its power according to the constitution and by-laws.

Goats for the Tubercular.—The Seaview Sanatorium, Staten Island, New York, has recently received from the United States Department of Agriculture thirty-six goats. The sanatorium is to try the experiment of giving the milk of these animals to tuberculous patients.

Louisiana Anti-Tuberculosis League Meeting.—At the eighth annual meeting of the Louisiana Anti-Tuberculosis League, held December 16, 1915, the following officers were elected to serve for the ensuing year: Dr. J. George Dempsey, president; Miss Kate M. Gordon and Dr. O. Joachim, vice-presidents; Dr. G. Farrar Patton, secretary; Dr. E. W. Mahler, treasurer; Mrs. L. P. Geisert, assistant secretary. Mr. C. P. Panter succeeded Dr. Joachim in the central council. Other members of the council are Drs. A. I. Weil, B. A. Ledbetter, S. K. Simon, Louis Scherer, George S. Brown, Charles Chassaignac, E. A. Robin, Miss Jean Gordon, J. H. La Besque, Drs. G. F. Patton, W. H. Seemann, E. L. McGehee, Geo. S. Bel, and E. W. Mahler.

Dr. Dempsey read his annual report. New patients at the clinic

in 1914 were 414 as against 455 new patients for 1915. Total consultations in 1914 were 2,608, and in 1915, 2,671. Camp Hygeia received 67 patients in 1914 and 74 in 1915.

The first Saturday in April was selected as "Anti-Tuberculosis Day," when a canvass for subscriptions will be made throughout the State.

The matter of expectorating on the sidewalk was taken up by the League, and it was decided to confer with Police Captain Boyle and his assistants in a campaign to eliminate the practise.

Personals.—Dr. C. Jeff. Miller attended the meeting of the Southern Surgical and Gynecological Association in Cincinnati.

Dr. F. J. Smith has accepted the appointment of resident physician at the Ford Hospital at Detroit, resigning as resident physician at the Johns Hopkins Hospital.

Dr. Isadore Dyer has been appointed to the position of consulting dermatologist to the Leo N. Levi Memorial Hospital in Hot Springs, Ark.

Dr. J. T. Halsey and Dr. Sam Logan attended the meeting of the Tri-State Medical Association, which met at Marshall, Texas, December 14.

Dr. R. O. Young, of Youngsville, La., was a visitor in the city during the past month.

Removals.—Dr. Nathan Barlow, from Cuyamel, Honduras, to Barnes Hospital, St. Louis, Mo.

Dr. G. C. Kirley, from Money, Miss., to Tutwiler, Miss.

Dr. Theo. F. Kirn, to 1115 Maison Blanche building.

Married.—On December 7, 1915, Dr. Julius Raymond Fernandez to Miss Florence Picard, of Biloxi, Miss.

On December 22, 1915, Dr. Herbert Windsor Wade to Miss Dorothy Paul, both of this city.

Died.—On December 1, 1915, Dr. Louis L. Abbott, of this city, physician and druggist, aged 52 years.

On December 14, Dr. Hal Metcalfe, of Natchez, Miss., aged 58 years.

Book Reviews and Notices

The Physician's Visiting List for 1916. P. Blakiston's Son & Co., Philadelphia.

For the sixty-fifth year this popular visiting list is offered to the medical profession. It is plainly but substantially bound in black leather and is obtainable in the weekly form for from 25 to 100 patients, in the monthly and in the perpetual edition. It contains the customary twenty-odd pages of useful tables besides the blank leaves for the visiting list proper and for various memoranda.

The Eye, Ear, Nose and Throat. Edited by Casey A. Wood, Albert H. Andrews, and Wm. L. Ballenger. Chicago: The Yearbook Publishers, 1915.

This small volume is Vol. 3 of the Practical Medicine Series, which gives an annual summary of the progress made in all branches of medical science. Such books are essentially practical in their nature, and the volume before us carries out that aim fully. We cannot give a synopsis of its contents, for the book itself is a synopsis, that is, of a year's work all over the world in the subjects discussed. This book supplies a practitioner with the substance of the enduring work done during a given year, and is thus a valuable companion to him who would know what has really been accomplished in the way of progress. McSHANE.

The Treatment of Fractures, by Chas. Locke Scudder, M. D., of Boston. W. B. Saunders Co., Philadelphia.

The eighth edition of this work, now ready for the profession, is probably the best edition on fractures yet published. The author has, as stated in his preface, tried to keep abreast with the times, and has done so to a certain extent. The only criticism we might make is in the want, we think, of proper emphasis of the many innovations introduced into the treatment of fractures since the introduction of the open method and the use of internal splints, and the application of autogenous bone grafts. Like most of our American text books, these matters are referred to in a general way and the technic left to the imagination of the reader. We believe that in so important a procedure, not only should the indications be discussed, but the intricate technic described minutely. Otherwise we have but the most favorable comment to make on this recent publication, and believe the student will find the whole subject matter of fractures not only thoroughly discussed but well illustrated with cuts and radiographs. The chapter on dislocation adds somewhat to the value of the book. MARTIN.

The Ductless Glandular Diseases. By Wilhelm Falta, Vienna, Translated by Milton K. Meyers, M. D., with a foreword by Archibald E. Garrod, M. D., F. R. C. P., London. P. Blakiston's Son & Co., Philadelphia.

Professor Falta's well known researches in this domain make the appearance of his work of special value and interest. The author announces in his preface that this new volume is concerned with the clinical aspects of the diseases of ductless glands, the results of experimental work being discussed only incidentally. In depicting these clinical aspects his own wide experience is supplemented by a thoroughgoing discussion and analysis of the literature. Considerable space and weight is of course given the phenomena which seem to confirm the theory of the inter-relation of the ductless glands; this was to be expected in the light of Falta's previously published views and teachings. The German edition of this work appeared too early to permit a consideration of Allen's attack upon Falta's pluriglandular theory of diabetes. The translator has added a few brief paragraphs outlining Allen's views but the discussion can hardly be called adequate or satisfactory. In later editions we may expect to find Falta joining issue with Allen or giving reason for accepting the latter's viewpoint. The domain of diseases of the ductless glands is not only fascinating but is becoming increasingly important. The present work is a distinct and valuable contribution, very readable, clear and comprehensive. The extensive bibliography will be of great value to the research worker and student of the subject.

LEMANN.

The Principles of Hygiene, by D. H. Bergey, A. M., M. D., Fifth Edition, thoroughly revised. W. B. Saunders Company, Philadelphia and London.

This standard text-book appears in a fifth edition brought up to date by a conscientious author who embodies a long experience as a teacher in a welcome exposition of a growing subject.

DYER.

Medical Jurisprudence. A statement of the Law of Forensic Medicine, by Elmer D. Brothers, B. S., LL. B. C. V. Mosby Co., St. Louis.

The generally accepted texts on medical jurisprudence are presented almost altogether from the medical side, borrowing from legal procedure where exact jurisprudence is pertinent. It is of especial interest, then, to review a book which is confined to the legal phase of the subject. Most physicians are concerned in the casual medical jurisprudence which applies to commonplace court cases requiring medical witnesses; all physicians should be interested in the legal side of more academic questions in forensic medicine. The author tries to show the legal point of view and his material is well presented. It has been drawn from a large source of supply, including judicial opinion and adjudicated cases in point.

Many topics receive attention which are ordinarily not even touched in the ordinary text books. The regulations governing the practise of medicine and the particular definitions of the variations in the law as applied to the subject are fully given with numerous citations for sustaining the arguments submitted. The obligations of a legal nature between patient and physician are set out—and are so well put that they are illuminating in places. The usual subjects of rape, crime, and insanity are touched upon.

A vast amount of ground is covered in some two hundred and seventy-five pages and yet the student of medical jurisprudence will find that many topics are merely scanned. The chief value of the book must rest upon the evident authoritative compilation of opinions which may be always used for ready reference.

DYER.

Occupational Affections of the Skin, by R. Prosser White, M. D., (Ed.), M. R. C. S., (Lond.). Paul B. Hoeber, New York.

The author has undertaken a most worthy task in accumulating the information relating to the varieties of trade dermatitis and other eruptions and in submitting a large detail of the substances occasioning them. The added toxic substances causing eruptions, not necessarily in occupational relation, are of material service. The subject is altogether original in its presentation and perhaps might have a larger audience if it were not so complicated. The dermatologist will find the book a valuable adjunct to the information hitherto available on the subject. DYER.

A Manual of Personal Hygiene, by American Authors; Edited by Walter L. Pyle, A. M., M. D. Sixth Edition, Revised and Enlarged. W. B. Saunders & Co., Philadelphia and London.

This is still one of the best books on personal hygiene and its constant revision makes it always modern in its exposition of the subject. As in former editions reviewed by us, the preponderance of space is given to the special sense organs, especially the eye, which is the only real fault to find with the book. The collaborating authors are all qualified for their parts and some of them are hygienists of the first rank, as Bergey and Wiley, notably. The illustrations are excellent and the letter press up to the standard of the publisher. The new chapter in this edition on the Hygiene of Infancy is timely and comprehensive, though concise.

DYER.

What Every Mother Should Know About Her Infants and Young Children, by Charles Gilmore Kerley, M. D. Paul B. Hoeber, New York.

The author has presented in a practical, useful way, a valuable collection of ready rules of conduct for the mother of young children. The subjects covered are just what will occur to every mother and the advice is so simply put that any woman of average intelligence may practise it. The chapters on feeding and the formulas

listed are of particular service. It is especially noteworthy that such an excellent authority on children and their diseases should have lent himself so admirably to the preparation of such an excellent and serviceable book. DYER.

John Shaw Billings. A Memoir by Fielding H. Garrison, M. D. G. P. Putnam's Sons. New York and London.

It is a privilege to survey the career of such a great man and to gather some of the inspiration his achievements engender. A contemporary of John Shaw Billings is quoted by the author of the Memoir as saying, "He was the greatest man I ever knew!" Yet, there are many men enjoying the profits from his genius, who probably have never stopped to ponder the source of their benefits. Dr. Garrison has placed American medicine in his debt for the compilation of the facts relating to Dr. Billings' career and he will continue to deserve the grateful appreciation of every man who may take the opportunity of reading the book itself. The monument to Dr. Billings in the establishment of the Army Medical Museum and Library at Washington would have alone placed him in a place all by himself in the medical history of this country—for that has made medical research possible. Dr. Garrison has employed his masterly literary ability in a life sketch which touches not only many lines of medical history in the past fifty years, but he has, at the same time, given so much of the human side to his sketch that there is a constant interest in the narrative from cover to cover. All American physicians, young men and older men, should read this book, for the lessons it brings on the one hand, and, on the other, for the glory it lends to American medicine. DYER.

The Alligator and Its Allies, by Albert M. Reese, Ph. D. G. P. Putnam's Sons. New York and London.

The fast growing decrease in this species makes the biological study of the alligator of current interest. The book is well illustrated and should attract the attention of those interested immediately in zoology and comparative anatomy. DYER.

Cancer, Its Cause and Treatment, by L. Duncan Bulkley, A. M., M. D. Paul B. Hoeber, New York.

This series of essays aims at establishing the theory of cancer from nitrogenous food. This entails a full discussion of the relation of diet to cancer and suggestions are offered through which the general metabolism of the patient may be influenced so as to resist the malignant growth. The book is eminently discursive and there are no practical conclusions which can help in the cure of the disease discussed. DYER.

Child Training as an Exact Science, by George W. Jacoby, M. D. Funk and Wagnalls Co., New York and London.

The strong modern movement to segregate defective or exceptional children from those of average or superior make up, physically or

mentally, makes any serious contribution to the general subject welcome. Such is the undertaking of Dr. Jacoby who reviews the matter as one of present day importance. He takes up in logical order the intellectual and physical development of the child, pointing out delinquencies, their recognition and the attention they should deserve. His own conclusion is apt enough to embody our own: "The methods of instruction deduced from the natural laws of the child's development enable us, notwithstanding a limited brain capability, to augment man's efficiency so as to fulfil the demands made by natural progress and to do this without overtaxing the normally constituted child." DYER.

Practical Materia Medica and Prescription Writing, by Oscar W. Bethea, M. D., Ph. G., F. C. S. F. A. Davis Co., Philadelphia. 1915.

This work is quite pretentious for the virgin effort of its author, who fully justifies the result of his training as a pharmacist, a student, physician and teacher. Over five hundred pages are used to expound the subjects of materia medica and prescription writing and much of the material is distinctly original, especially the part considering prescription writing. The book is arranged for practical reference: Definitions first, then the alphabetic consideration of drugs and their application, with prescriptions as examples. The author spends quite a little space in showing how prescriptions should not be written. We confess to lack of accord with the method employed in writing all the words of prescriptions with initial capitals. Modern practise urges the use of capitals only for proper names, places and the like, and it dignifies the adjective qualifying a drug too much to put a capital in front of it. 'sodium bromid' was much better to us than "Sodium Bromid" and 'syrup of bitter orange peel' looks better to us than "Syrup of Bitter Orange Peel" and besides, the usage of Latin terms does not justify so much freedom with capitals, even though the custom may allow it.

This is the only criticism we have to make of so large an undertaking. The logical presentation of the subject matter is everywhere evident and the extent of the work has not prevented a close attention to the detail in its make up. Altogether it is a praiseworthy publication and creditable to the author as it is to the University with which he is associated. DYER.

War Surgery. By Edmond Delorme, Médecin Inspecteur Géneral de L'Armée, etc. Translated by H. De Méric, Surgeon. Paul B. Hoeber, New York, 1915.

This is a handy little octavo volume of some two hundred and fifty pages, practically presenting in a concise way the subject of its title. The discussion takes up the materials contributory to the surgery in war and then, with detail, reviews the topographic occasion for their occurrence, and their relief. As a departure from the usual text and as a timely stimulus to more accurate knowledge of a special class of emergency surgery, the book has a distinct place. DYER.

Essentials of Medical Electricity for Medical Students and Nurses. By George Knapp Abbott, A. B., M. D. W. B. Saunders & Co. Philadelphia and London, 1915.

With numerous illustrations and simple text, the author successfully essays to define the terms and scope of medical electricity. The application of the knowledge conveyed is outlined briefly, so as to cover indications for the use of the various electric currents described. The book is commendable for its distinct success in covering the "Essentials of Medical Electricity" without the usual digression in discussing irrelevant theories. DYER.

Physical Diagnosis, by Richard C. Cabot, Asst. Professor of Medicine, Harvard University, 6th Edition. 521 pp. Revised and Enlarged with 6 plates and 268 figures in the text. Wm. Wood & Co., New York. 1915.

Dr. Cabot has considerably enlarged and improved his always valuable text book. The section of diseases of the heart has gained greatly in clearness and accuracy by Cabot's classification of cardiovascular diseases in five groups: (1) "rheumatic," (2) syphilitic, (3) arteriosclerotic, (4) nephritic (or better, nephrogenous), (5) congenital malformations. A short but clear and suggestive chapter on arteriograms, phlebograms and electrocardiograms has been introduced; at any rate it will serve the teacher as a text for a further exposition of the subject and will stimulate the student to a closer observation of heart irregularities and an active inquiry as to their nature. The section on aneurism would still leave the impression that most aneurisms of the aorta present such obvious phenomena as tumor, thrill, diastolic shock, murmur, whereas as a matter of fact if we wait for the appearance of these we shall miss the vast majority of aneurisms and make the diagnosis only in the most advanced cases. It is to be hoped that in future editions Cabot will lay more stress upon the early diagnosis and will bring his text in this particular more in conformity with the recent ideas of the frequency of so-called latent aneurisms.

Cabot's book remains as it has been for a long time probably the best guide and working companion for the student of physical diagnosis. I. I. LEMANN.

The Starvation Treatment of Diabetes with a Series of Graduated Diets as used at the Massachusetts General Hospital, by Lewis Webb Hill, M. D., and Rena S. Eckman. With an introduction by Richard C. Cabot, M. D., 72 pages. W. M. Leonard, Boston, 1915.

This little booklet gives very briefly (5 pages) the outlines of the Allen treatment of diabetes. The bulk of the remaining pages is taken up by a graduated series of diets illustrating the manner in which the method may be applied. While useful in its suggestions the booklet is open to the objection that it may convey the idea that the Allen plan may be used by employing these "ready made" diet

schemata in a certain definite order. On the contrary, it is essential in the Allen treatment as in every other treatment of diabetes, that the diet be a "Made to order" one exactly to fit the patient. For this reason it would seem to the reviwer that he sress should be laid upon the need of the physician acquainting himself thoroughly with tables of food composition and food values and of his calculating his patient's diet day by day with these tables before him. The true value of such a book as Hill and Eckman's would then be to serve as an example of how this might be done for a given patient or patients. This, in its present form, it does not do.

LEMANN.

A Synopsis of Medical Treatment, by George Cheever Shattuck, M. D. 2nd Edition. pp. 185. W. M. Leonard, Boston, 1915.

Dr. Shattuck has succeeded admirably in his purpose of stating succinctly, in almost tabular form, the outlines of treatment in the common, acute and chronic conditions. He has also succeeded in avoiding the pitfalls of the usual compend for he does not attempt to exhaust his field but rather by logical sequence to suggest elaboration of his schemata. His therapeutic recommendations are based on sound reasoning and good practice. The book can be heartily commended to the fourth year medical student.

LEMANN.

Fractures and Dislocations, by Miller E. Preston, A. B., M. D. Published by C. V. Mosby Co. 1915.

Careful reading of this volume shows it to have many characteristics which should make it a valuable addition to the literature of fractures and dislocations.

(1) The Surgical Anatomy, so essential to a thorough appreciation of the possible injuries in a neighborhood is given a prominent place in the text.

(2) Fractures and dislocations are discussed together rather than in separate chapters, as in so many of our texts, thus bringing the possibilities of injury to the reader's mind.

(3) After-treatment and prognosis, so often neglected in texts, are given a proper attention.

(4) For some strange reason the author mentions a Velpeau bandage as a form of dressing for fractures of the clavicle.

(5) The description of the muscular action which is responsible for deformity in fractures of the upper end of the humerus is admirable, but the author does not seem to pay due attention to their action in his method of treatment. On page 98, he says, "The usual deformity consists in an upward and inward displacement of the upper end of the lower fragment." Then he says, "With reduction accomplished the question of fixation arises." "The most common method of fixation is by means of an axillary pad the moulded

plaster shoulder cap." "In fractures of the upper end of the humerus it will seldom be necessary to include the elbow or forearm in the splint." Unless you include the elbow, the dressing cannot be said to truly immobilize the part because there is nothing in the dressing which prevents the action of the upward displacing tendency of the biceps and triceps. A rather dangerous teaching is found on page 104: "It is the author's opinion that most cases of this kind (in which reduction cannot be maintained with the arm by the side) should be operated on and the fragments secured in position by direct fixation." Such a dictum is dangerous because the student is not encouraged to practice the best method of conservative treatment, but is rather advised to attempt something which he may be totally unprepared for.

Throughout the book not sufficient emphasis is laid on the value and necessity of anesthesia in the reduction of deformities following fractures.

The chapters on the operative treatment of fractures are good. When in the chapter on bone transplantation the author discusses the questions of callus formation and the function of the transplant, he states certain things as established facts which are not borne out by experimental data. See page 772.

In the chapter on the treatment of compound fractures the author speaks of washing out the wound thoroughly, a treatment which most have discarded for fear of spreading infection.

On the whole the book is good and is worthy of a place, particularly because of the attention paid to anatomic facts, and because of the details of after treatment which are so often neglected.

ISIDORE COHN.

Publications Received

W. B. SAUNDERS COMPANY. Philadelphia and London, 1915.

The Medical Clinics of Chicago. Volume 1, No. 3, November, 1915.

LEA & FEBIGER. Philadelphia and New York, 1915.

Progressive Medicine. Edited by Hobart Amory Hare and Leighton F. Appleman, M. D. December 1, 1915.

P. BLAKISTON'S SON & CO. Philadelphia, 1915.

Anatomy of the Brain and Spinal Cord, by Harris E. Santee, A. M., M. D., Ph. D. Fifth edition, revised and enlarged.

The Nose, Throat and Ear: Their Functions and Diseases, by Ben Clark Gile, M. D.

F. A. DAVIS COMPANY. Philadelphia, 1915.

An Introduction to Bacteriology for Nurses, by Harry W. Carey, A. B., M. D.

THE YEAR BOOK PUBLISHERS. Chicago, 1915.

The Practical Medicine Series. Volume VI: **General Medicine.** Edited by Frank Billings, M. S., M. D., and J. H. Salisbury, A. M., M. D. Volume VII: **Obstetrics.** Edited by Jos. B. DeLee, A. M., M. D., with the collaboration of Herbert M. Stowe, M. D.

REBMAN COMPANY. New York, 1915.

The Obstetrical Quiz for Nurses, by Hilda Elizabeth Carlson.

FORBES & COMPANY. Chicago, 1915.

Your Baby, by Edith B. Lowry, M. D.

WASHINGTON GOVERNMENT PRINTING OFFICE. Washington, D. C., 1915.

Public Health Reports. Volume 30, Nos. 45, 46, 47, 48 and 49.

Report of the Department of Health of the Panama Canal for the Month of September, 1915.

MISCELLANEOUS:

Transactions of the American Otological Society. Forty-eighth annual meeting, Niagara Falls, Ontario, Canada, June 3 and 4, 1915. (Mercury Publishing Company, Printers, New Bedford, Mass.)

Transactions of the Tri-State Medical Association of the Carolinas and Virginia. Seventeenth annual session, Charleston, S. C., February 17 and 18, 1915. (Observer Printing House, Charlotte, N. C., 1915).

Report of President and Health Officer to Shreveport, La., Board of Health.

Reprints

The Dog as a Carrier of Parasites and Disease, by Maurice C. Hall, Ph. D.

Reminiscences of Captain James B. Eads of Jetties Fame, by Edmond Souchon, M. D.

Railway Mail Pay, by Prof. Edgar B. Kay.

Quinin and Urea Injections in Hyperthyroidism, by Leigh F. Watson, M. D.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans for November, 1915.

Cause.	White	Colored	Total
Typhoid Fever	4	1	5
Intermittent Fever (Malarial Cachexia)	2	1	3
Smallpox	.....	.....	....
Measles	.....	.....	....
Scarlet Fever	.....	.....	....
Whooping Cough	.....	.....	....
Diphtheria and Croup	12	6	18
Influenza	9	3	12
Cholera Nostras	.....	.....	....
Pyemia and Septicemia	.....	.....	....
Tuberculosis	37	45	82
Syphilis	2	3	5
Cancer	24	12	36
Rheumatism and Gout	1	4	5
Diabetes	4	.....	4
Alcoholism	2	.....	2
Encephalitis and Meningitis	2	.....	2
Locomotor Ataxia	2	.....	2
Congestion, Hemorrhage and Softening of Brain	22	13	35
Paralysis	3	3	6
Convulsions of Infancy	1	.....	1
Other Diseases of Infancy	10	9	19
Tetanus	1	3	4
Other Nervous Diseases	.....	2	2
Heart Diseases	60	52	112
Bronchitis	7	1	8
Pneumonia and Broncho-Pneumonia	21	38	59
Other Respiratory Diseases	5	1	6
Ulcer of Stomach	.....	1	1
Other Diseases of the Stomach	2	3	5
Diarrhea, Dysentery and Enteritis	25	25	50
Hernia, Intestinal Obstruction	1	2	3
Cirrhosis of Liver	9	4	13
Other Diseases of the Liver	3	1	4
Simple Peritonitis	.....	.....	....
Appendicitis	3	2	5
Bright's Disease	29	18	47
Other Genito-Urinary Diseases	9	2	11
Puerperal Diseases	3	3	6
Senile Debility	2	1	3
Suicide	6	1	7
Injuries	20	20	40
All Other Causes	17	12	29
Total	360	292	652

Still-born Children—White, 23; colored, 27. Total, 50.

Population of City (estimated)—White, 272,000; colored, 101,000. Total, 373,000.

Death Rate per 1000 per Annum for Month—White, 15.88; colored, 34.69. Total, 20.97. Non-residents excluded, 18.72.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure.....30.11

Mean temperature .....66.

Total precipitation ..... 2.29 inches

Prevailing direction of wind, southeast.

New Orleans Medical and Surgical Journal.

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Original Articles

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. A complimentary edition of one hundred reprints of his article will be furnished each contributor should he so desire. Covers for same, or any number of reprints, may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

THE ALLEN TREATMENT OF DIABETES.

By J. T. HALSEY, M. D., New Orleans, La.

When for a new method of treatment the claim is made (and substantiated by sufficient evidence) that it will save the lives of patients, formerly given up as irrevocably lost, and that, in others less desperately ill, its employment will result in a more rapid restoration and more certain maintenance of good health and for larger periods, than has been the case with the treatment usually employed, it is certainly worth while for the medical profession to become acquainted with such a method. It is for this reason that the writer has thought it worth while to present a brief account of Dr. Allen's method of treating diabetics, prefacing the same with a statement of Allen's own results and those of others who have applied them. In parenthesis the writer would state that, through the courtesy of Dr. Allen and the Director of the Hospital of the Rockefeller Institute, he had the opportunity last summer of seeing and following a number of cases thus treated and of examining a number of records of others.

First as to results:

Allen, up to April last, had treated about forty cases of diabetes, almost all of whom were of the most severe degree, with apparently hopeless prognoses. Of these, thirty-five were still alive, the great majority in a very satisfactory condition. A few were so far advanced, however, when they came under treatment, that it has not been possible to restore them to a satisfactory degree of health or strength. Of the severe cases which had died, one left the hospital for disciplinary reasons. Of the other six, several were suffering from severe complications such as advanced cardiac, renal, or pulmonary disease, which were more truly the cause of death than was the diabetes. These results are not only satisfactory, but are astonishingly good, in view of the character of the cases treated. In most of them our formerly most esteemed methods of treatment had been tried and found wanting, many being complicated by cardiac, renal, or pulmonary disease, while in a large percentage of this series coma was either already present or imminent. To fully appreciate what unfavorable cases make up this series, one must either have seen a number of the cases or have carefully studied the records of the individual patients. Joslin, Christian, and others, who have adopted Allen's treatment, are unanimous in the conclusion that under this plan of treatment many cases formerly hopeless may now be saved. From what he has himself seen and from the reports of others, the writer now believes that diabetes is almost always a controlable disease, and that, with reasonable care on the part of the physicians and patients, it can be absolutely checked. Moreover, in the milder or less serious cases he believes that much of real value is to be gained by using these new methods.

The Allen treatment of diabetes is in a number of particulars a radical departure from that which in recent years has been generally approved and accepted as the best method. Its chief and most important features are briefly stated as follows:

1. Inauguration of treatment by a period of *absolute fasting,* lasting ordinarily from one to four or five days (in extreme cases for as long as ten days).

2. *Underfeeding,* i. e., giving much less than is ordinarily considered an adequate ration, for a period of variable length following the period of absolute fasting.

3. The very careful determination of, and avoidance of ex-

ceeding the *tolerance* of the patient, not only for carbohydrates and proteids (as under former methods of treatment), but also for *fats,* generally looked upon not only as harmless, but as actually beneficial to the diabetic, whether of mild or severe degree.

4. Careful *avoidance of an increase of weight* unless the patient be decidedly underweight.

When called upon to adopt so radical a departure from tried and accepted methods, it is only right to ask what are the advantages claimed or demonstrated, which may be secured by its adoption. Very briefly they are as follows:

(*a*) More rapid and certain abolition of the glycosuria, and more important still, of its cause, the glycemia.

(*b*) More rapid and more successful building up of the carbohydrate tolerance or, in other words, the ability to combust carbohydrates.

(*c*) Prompt and complete relief of the acidosis or acidemia, and, as a result, prevention of or, if present, the clearing up of that most serious of the results of diabetes, diabetic coma.

If it will do this, we will all agree that it is a treatment worth while.

Inaugural fast.—Taking up the above in turn, the inaugural fast may first be considered in detail. In the great majority of any but the most severe cases this need not be for longer than from two to four days. Generally speaking, its duration should be about twenty-four hours longer than is necessary to secure a disappearance of sugar from the urine and the disappearance of marked dimunition of the acidemia (if such be present), as evidenced by the reaction of the urine and the lessening of the ferric chlorid reaction. If necessary to prolong the fasting for more than two days, it is well to give about two ounces of beef broth four to six times in twenty-four hours.

It is, however, not yet possible to dogmatize as to the length of the initial fast. In some especially obstinate cases it will be best to interrupt it by a period of careful feeding, and after a variable length of time, again fast the patient, when, as a rule, one or two days of abstinence from food will lead to a complete disappearance of the glycosuria or acidemia.

During the fasting periods the patients should drink freely of water or weak tea (no sugar or milk), and, if acidosis be present, take from four to eight ounces of whisky in divided doses.

Feeble patients will bear these fasts best if kept in bed well covered and, in cool weather, surrounded by hot water bottles. It is most surprising and gratifying to see, in even desperately sick patients, an increase in strength result from a fast of several days' duration. While we can confidently expect that the acidosis, if present, will quickly diminish in intensity, alkalies should be given freely at the commencement of the fast and the dosage lessened as the urine becomes alkaline. Even though no acidosis be present, it is probably wiser to give alkalies when starving a diabetic for the first time.

That glycosuria should be abolished by absolute fasting is, in the light of former experience, not in the least surprising, for to some extent absolute or partial starvation for short periods has been a part of our treatment of certain cases, but that acidosis can be lessened and abolished by this measure is absolutely in opposition to what we have all been accustomed to believe. Did we not fear to too suddenly reduce the carbohydrates for fear of causing this dreaded acidosis, and did we not all believe that, when coma threatened, we should increase the ration, especially that of carbohydrates? Moreover, we knew that in the healthy individual fasting or even underfeeding was regularly followed by the appearance of acetone and diacetic acid in the urine, as evidences of the development of an acidemia. And yet it *is* true that in the diabetic an acidosis of high intensity may be lessened or abolished by a sufficiently prolonged fast. This demonstration of the diabetic's paradoxical reaction to fasting is the most surprising as well as one of the most important of Allen's contributions to our knowledge of diabetic physiology and therapy.

Period of Underfeeding. Carbohydrate:.—Following the period of fasting, feeding should be inaugurated by giving small but gradually increasing amounts of five per cent. vegetables (see table), which, in especially severe cases, should be twice or thrice boiled in order to still further reduce their starch content. Six to ten ounces may be given the first day; then, if glycosuria does not return, these amounts may be increased by three to four ounces (90 to 120 gms.) a day until the daily ration reaches sixteen to twenty ounces (500 to 600 gms). After this the amounts should be increased daily by about three ounces (100 gms.) of the 5% vegetables or correspondingly smaller amounts of 10, 15, and 20% vegetables, 5 and 10% fruits, and later, in mild cases,

such foods as bread and cereals, until the patient is taking about one ounce of carbohydrate to twenty pounds of body weight (3.0 gms. per kilo). During this period the urine should be tested for sugar and also diacetic acid, using 24-hour or better 12 or 8-hour specimens. Reappearance of sugar or diacetic acid requires stopping all food for twenty-four hours and resuming feeding with about half as liberal a ration.

PROTEIDS.—When there has been no glycosuria for two days, two or three eggs may be given, and, if no bad results ensue, these may be increased two each day until six are taken daily, or meat may be given, increasing the amount by about two ounces (60 gms.) daily until the patient is taking about 1/6 ounce of proteid (about 2/3 ounce of meat) per 10 pounds body weight (1.0 gm. proteid per kilo) daily. Reappearance of sugar or reappearance or increase of diacetic acid calls for the same measures as if caused by too much carbohydrates. In severe cases with little or no carbohydrate tolerance, Joslin advises that only about three-quarters of this ration be given. In mild cases fifty per cent. more (1.5 gm. per kilo) may be given later if desirable.

FAT TOLERANCE.—Soon after proteids are given small amounts of fats (½ to 1 oz.—15.0 to 30.0 gm.) may be given in the form of butter or bacon (3 or 4 oz. of broiled bacon=1 oz. of fat). This should be increased very slowly or not at all until the patient is getting his necessary proteid ration. Then the fat may be increased by ½ to 1 oz. (15.0 to 30.0 gms.) daily until the patient holds his weight or is receiving about two-thirds oz. per 10 lbs. body weight (4.0 gm. per kilo).

In contradiction to accepted views, Allen emphasizes the fact that a too liberal fat ration may lead to the reappearance of sugar or diacetic acid in the urine, and he insists that the failure to recognize this point has been a large factor in the failure of treatment in many diabetics.

Not only must the patient remain within his tolerance for each type of food, carbohydrates, proteids, and fats, but the physician must see to it that the total energy value of the diet shall not exceed the patient's tolerance. The reason for this appears to be as follows:

The diabetic organism (except perhaps in extremely rare instances) retains in varying degrees the power to combust some carbohydrate and will do this unless it can satisfy its needs by

the combustion of other food materials, such as either proteids or fats. We must, therefore, constantly give the diabetic only enough food to barely cover his needs, and so, as it were, force to burn carbohydrates in place of other material. Whether this hypothesis be true or not, Allen has repeatedly demonstrated that sugar, or diacetic acid or both may be made to reappear in the urine by feeding too large amounts of fats.

Control of Weight.—In diabetic patients we have been accustomed to consider a gain in weight as a good sign and as something to be desired. Here, again, Allen's view is opposed to that generally accepted. Unless the patient is decidedly under his proper weight (which does not necessarily mean his former weight), he believes that a gain in weight is distinctly undesirable and fraught with danger to the patient. As a rough general rule, he advises that the patient be brought back to a weight ten to fifteen pounds under his former figure, if this represents a fair degree of nutrition, while in obese cases he considers it best to reduce the weight, at times very decidedly.

In this connection it is absolutely impossible to dogmatize, for each case will be to a large extent an individual problem. The idea underlying the principle of limiting the weight of the patient is that both theory and experience indicate that the weakened pancreas is often able to handle the carbohydrate function only for a body of a certain limited weight, and that it breaks down and becomes inefficient when called on to do the work necessary for the maintenance of a larger one.

Periodical Fast Days.—If the carbohydrate tolerance is very low (below 2/3 oz. or 20.0 gms. of carbohydrate), a weekly fast for 24 hours must be insisted on. By less severe cases, with a tolerance up to 2 oz. (60.0 gm.), one-half the usual ration may be taken every seventh day, but on this day carbohydrates are allowed only in the form of 5% vegetables, and in amounts equaling one-half the usual carbohydrate ration. With higher tolerance the only limitation on the "fast" days need be the limitation of the carbohydrates to 5% vegetables.

These fasting or partly fasting days are of great importance and benefit to the patient for two reasons. One is that they build up and protect the tolerance. The other is that they serve to keep the patient cognizant of the necessity of care in his diet.

Those individuals who develop a fairly high tolerance for car-

bohydrates may finally work back to a relatively liberal diet, one to which they may adhere without much self-denial. Still "once a true diabetic, always a potential diabetic," would appear to be a good *"confessio credis"* in this field of practice. Such patients should, if possible, be persuaded that, while they are in one sense cured, the price they must pay for a permanent cure is the persistence of care in eating, so as to take, as far as may be necessary, the strain off their permanently weakened power of burning up sugar and starch. They must also be convinced that any return of glycosuria is an imperative command to immediately fast for at least twenty-four hours and to again undergo a period of careful dieting, which fortunately will almost invariably be far less trying than the original one.

The necessary limitations of space make it impossible to more than indicate the general principles and a few of the details of this treatment. For further enlightenment it will be necessary to refer to some, at least, of the articles enumerated in the accompanying bibliography. Among these Joslin's first article should prove especially helpful, while the little booklet of Hill and Sherrick, containing a number of diets, should prove useful in carrying out the dieting.

The success or failure in any case will depend on the willingness of the physician to devote the necessary time and care to seeing that the essential details are attended to properly, and also on his ability to convince patients that "all this fuss" is worth while. Good results will in no case be obtained without considerable cost of time and trouble to the physician and an equal or greater cost of patience and self-denial on the part of the patient, but the results will be worth while. Grave cases should, if possible, be treated in well-equipped hospitals and by those who have had experience in handling such cases, but mild or emergency cases should and can be treated by any competent physician. There is one class of case in which the writer would especially urge the trial of Allen's plan. This is in diabetics with a surgical complication, such as gangrene, carbuncle or septic infection. Up to the present nothing, as far as the writer knows, has been published about such cases, but from personal communications he knows that in such conditions this treatment has proven of striking value. Recently he has seen, with Dr. F. W. Parham, most gratifying results from its employment in a severe

diabetic with extensive gangrene and still more extensive accompanying cellulitis.

In conclusion, it will, I think, interest physicians to learn that this valuable and important stride in therapy is the direct result of, and could not have been accomplished without, animal experimentation. Everything new and valuable brought forth by Dr. Allen came to him through the animal experiments carried out by him during a number of years, and everything tried out on his human patients was first tried out and its value demonstrated on dogs in which he had induced diabetes of varying intensity.

Some of the accompanying tables are condensed and somewhat altered from Joslin's article:

Carbohydrate-free foods: Meats, fish, broth, gelatine, eggs, butter, oil, coffee and tea. Substitute for sugar, saccharin, which most patients do not like.

Vegetables 5%: Asparagus, brussels sprouts, cabbage, cauliflower, egg plants, cucumbers, kohl rabi, lettuce, pumpkin, radishes, rhubarb, spinach, sauer-kraut, tomatoes.

Vegetables 10%: Beets, carrots, mushrooms, okra, onions, squash, turnips.

Vegetables 15%: Artichokes, lima beans (canned), parsnips, peas (green).

Vegetables 20%: Beans (baked), corn (green), maccaroni (boiled), potatoes, rice boiled.

Fruits 5%: Olives (20% fat), grapefruit.

Fruits 10%: Blackberries, cranberries, lemons, oranges, peaches, strawberries.

Fruits 20%: Bananas, plums.

With vegetables of the 5% group, reckon only about 3% actually available and for 10% group about 6%.

Miscellaneous: Meat contains about 20 to 25% of proteid when cooked and 5 to 25% of fat, broiled bacon about 8% proteid and 30% fat, fish about 20%, proteid and 10 to 25% fat, an averaged size egg 5 grms. or 1/6 oz. proteid and nearly as much fat, bread about 50% starch, grits (cooked) about 20% starch, cornbread about 50% starch, butter 85% fat, milk 3½% proteid and fat, and 5% sugar, gravity cream 20% fat.

Bread substitutes usually contain almost as much starch as ordinary bread. Huntley and Palmer's Akoll biscuits contain only a small amount of starch and are well liked by many patients. Hermann Barker, 433 Broadway, Somerville, Mass., supplies several gluten flours of different carbohydrate content. Casoid flour (Thos. Leeming & Co., N. Y.) contains 85% proteid but no starch. The writer has found that some patients get much satisfaction out of

bran breads, made with equal weight of bran and flour and containing approximately 25% of starch. Hoyt's dainty Fluffs No. 1, containing less than 10% starch and about 80% proteid, and Dainty Fluffs No. 2, containing about 25% starch, may be obtained from Pure Gluten Food Co., 90 W. Broadway, N. Y.

A sample diet for a severe diabetic weighing 60 kilograms (130 lbs.) follows (Joslin):

Food	Quantity in grams	in ounces	Calories.
Carbohydrates	10	1/3	40
Proteid	75	2.5	300
Fats	150	5	1350
Alcohol	15	1/2	105
Total			1795

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LITTLE POINTS OF IMPORTANCE IN ABDOMINAL WORK.*

By E. L. KING, M. D., New Orleans, La.

From the Department of Obstetrics and Clinical Gynecology, Tulane University of Louisiana.

Until very recently, the time of those engaged in operative and hospital work has been occupied with the study of operative procedures and in devising new ones. Now that there are many good operations (as well as many bad ones) for the relief of the various pathological conditions, the profession, led by Crile, has turned to the study of the reduction of post-operative morbidity and of mortality. Dickinson, of Brooklyn, has also started some agitation along the lines of efficiency in hospital work. For the past two years, in hospital and private work, Dr. Miller and assistants have been working along these lines, and we are much encouraged by the results. The procedures used are not new, nor is their application, but we feel that they are not receiving the attention they deserve, hence this paper.

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First, Preparation.—The purgative is preferably given about 4:00 p. m., thus the patient is not continually awakened, or kept awake, by its action, as is the case when given about 8:00 or 9:00 p. m. A sedative is administered when necessary, in order to insure a good night's rest. Thanks to the benzin-iodin method, the patient is not tortured by an elaborate preparation. A hypodermatic injection of morphin sulphate, gr. 1/6, and atropin sulphate, gr. 1/150, is given *one hour* before the operation. This tranquillizes the patients, most of them being very drowsy when brought to the operating room, and it also lessens by a goodly percentage the amount of anesthetic used, especially in the induction, which is, as a rule, quiet and free from excitement. Ordinarily, ten minutes elapse from the beginning of the anesthetic (when ether is used) to the skin incision.

Second, Anesthetics.—At the Charity Hospital, we, of course, use ether. In private work, we use gas whenever possible, and find it very satisfactory; we have used it in plastic work, goiter, breast amputations, various minor procedures, and in every variety of abdominal work. When used in abdominal operations, the anoci-association method of Crile is employed. *When used properly,* it gives good relaxation in practically all cases, but it is a common thing to see an operator carefully anesthetize the skin and fascia, and neglect entirely the tissue most imperatively needing attention, viz., the parietal peritoneum; or he forgets that gas is being used, and is not over-gentle in his manipulations. Some cases, with dense adhesions and thick walls, will need a little ether added to the gas in order to relax them. In many cases, we use ether, with gas as a preliminary. In either case, care is taken to use the minimum amount; every anesthetic is a poison and should be handled accordingly.

Third, Avoidance of Chilling.—It may seem unnecessary to mention this, but it is often neglected. I am convinced that the great majority of cases of pneumonia arising within the first 24 or 48 hours are due to this oversight. Parenthetically, I might state, that in my experience, in practically every case of post-operative pneumonia there has been some little "slip" or oversight on the part of someone. So we keep the patient well covered, and well tucked in. At the end of the operation, the shirt or gown is changed, the skin wiped dry, and a dry, warm shirt put on. Then the patient is well covered by *two* blankets, even

in the summer, the head is well covered, and they are *kept* covered. During the operation the hair of the patient is protected by a rubber cap, such as an ordinary bathing cap. This avoids the permeation of the hair with ether, and also its soiling in case of vomiting or during gastric lavage.

FOURTH, GENTLE HANDLING OF VISCERA, ETC.—Before opening the abdomen, the peritoneum (or, in some cases, the skin) is clamped to two towels in order to prevent soiling the peritoneum with iodin, as we fear that this may cause adhesions. The operative work is done with as little trauma as possible; this is a point so obviously essential that we would not mention it were it not so frequently disregarded. Retractors or laparatomy sponges are seldom used, and special care is taken to handle the intestines as little as possible. Careful hemostasis is insisted upon; thus a a hysterectomy for fibroids may often be performed with the loss of not over a tablespoonful of blood. When ready to close the abdomen, clean instruments and needles are used, and clean towels placed around the field.

FIFTH, ASSISTANTS.—The matter of assistance is vitally important. Both in hospital and private work we insist upon having the same assistants, trained to assist and not to encumber. Naturally much better results are obtained in private work, where the same operator, the same skillful first assistant, and the same anesthetist work in harmony year in and year out. In this way, useless movements and time-wasting performances are avoided, and the maximum efficiency is obtained. Very good results can be obtained at the Charity Hospital, however, where the interns are eager to co-operate if they only know what the operator wishes them to do.

SIXTH, GASTRIC LAVAGE.—At the completion of the operation, while the operator is suturing the skin, the anesthetist washes out the patient's stomach. *When properly done*, this is one of the most important steps in avoiding post-operative troubles. But gastric lavage on the unconscious patient is very different from the same performance with the patient wide awake. If not thorough, it is useless—so we use a good stiff tube not softened by repeated boiling. It is thoroughly washed after use, and then washed with some antiseptic solution. We are at times surprised at the amount of bile and mucus obtained; at times I have had to work for 20 or 30 minutes before the water returned clear,

but we are repaid for the trouble, as we rarely have a patient vomit. By the use of these various measures, the post-operative troubles are few, and hence the treatment is greatly simplified. For the first 12 hours, the patient is given cracked ice and water, *nothing else*. Then, as a rule, he is ready for any liquids except milk. They seldom get milk during the first 48 hours. Light diet is ordered usually about the third or fourth day, and full diet the fourth or fifth day. The freedom from serious trouble is shown by the fact that fully 50% of the cases require but one hypo of morphin, gr. 1/8, and a few require none at all. Many are relieved by the following:

Aspirin .....gr. xv
Whisky .....dr. 3
Water .....dr. 3
By enema to be absorbed.

The patients are turned when they so desire. Rectal tube, saline flushes or enemas are used for gas pains. We do not give purgatives in the first few days, but empty the bowels with an enema of olive oil, one ounce, glycerin, one ounce, and water, one pint.

What are the results of all this attention to detail? We have better results in that the patients experience smoother convalescence, a quicker return to normal, thus the morbidity rate is lower and, most important of all, the death rate is lower. Post-operative complications are rare and seldom troublesome; we have no post-anesthetic pneumonia, little or no gaseous abdominal distension, practically no vomiting, little or no wound infection. This is much better than the results obtained before these minor points were stressed, so much better that we are encouraged to try to obtain still better results in the future. For example, in the year before we began to notice these points two patients were lost after several days of severe vomiting, one in particular dying suddenly when an attempt was made to wash out her stomach.

Let us give a few figures to support these contentions. First, as regards vomiting. Two years ago, in reviewing the records of 650 cases, I found that vomiting severe enough to be annoying occurred in 37.2% of all cases, with a considerably higher percentage in the abdominal cases. In the period from October 1, 1914, to October 1, 1915, of 74 laparotomies in which ether was used, vomiting severe enough to be annoying occurred in 26.9% of

the cases, these 74 being cases treated by gastric lavage at the end of the operation. In the period from October 1, 1913, to October 1, 1914, of 30 similar cases, without lavage, annoying vomiting occurred in 23% of the cases. Of 12 cases in this period, with lavage after operation, there was moderately severe vomiting in only 8%. The gas cases show still better results, but even when using gas we often wash out the stomach, especially when the gall bladder has been handled. As regards mortality, in the 1913-1914 period, of 80 laparotomies, 11 died; in the 1914-1915 period, of 117 laparotomies, 5 died. We expect to do better still. In the Charity Hospital almost as good results can be obtained. For instance, in our colored gynecological service 99 laparotomies were performed during the year, with three deathhs. The various details can be attended to just as well here as in a private hospital.

Some might contend that these procedures are useless and time-consuming. They need not be so. On an average, 10 minutes elapses from the discontinuing of one anesthetic to the beginning of the next, and time can be saved during the operation at every turn. We would strongly urge on surgeons attention to these details, and feel sure that by so doing an operator will find his work more efficient and his results more satisfactory.

PERSONAL OBSERVATIONS AND DEDUCTIONS FROM CLINICAL AND SURGICAL EVIDENCE TO ACCOUNT FOR THE INCREASE OF APPENDICITIS.*

By P. B. SALATICH, M. D., F. A. C. S., New Orleans, La.

How often are we asked the question: "Why is appendicitis more frequent now than formerly?" Our older patients tell us appendicitis was not so common in their earlier lives as it seems to be at the present time. Of course, many other names were given to appendicitis and numberless cases passed away with a wrong diagnosis. Does our generation live any different than past ones? Modern civilization seems to demand that we live faster. In olden days a man thought of his meals with great

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pleasure and did not hurry to get through so as to keep an engagement or take part in a dinner or dance. After his meals he would rest and allow nothing to interfere with his digestion. This is followed now to a certain extent in Europe. After meals they adjourn to the veranda or garden and coffee and cigars are served. The Europeans call the Americans a bunch of dyspeptics. The results were that our forefathers suffered less from their stomachs and their bowers were, as a rule, regular. To-day our meals, and especially luncheon, occupy a very small part of our existence. The quick lunch counter, "serve yourself," Childs and the cafeteria do a big business. They are sought because you can get a meal quickly and rush back to work. The consequences are hardly necessary to enumerate. Mastication is imperfect, compelling the stomach to work harder than it should to force the food through the pylorus. During the beginning of digestion his energy is centered on his work and naturally directs his blood to other parts than the stomach, which needs it mostly at this time. Fermentation and defective elimination are manifested, after a shorter or longer interval, giving all the familiar symptoms of belching and distention after meals, constipation and tympanitis.

The way these people eat! As they do they act towards the process of elimination, having no fixed time to move their bowels, this being expressly the case in women. I remember asking a woman, just before making arrangements to operate, if her bowels were regular. She said: "Why, Doctor, my bowels only move when I menstruate, every 28 to 30 days." When we consider the situation of the appendix, being in the most dependent portion of the large intestine, we can readily see why it is so frequently associated with bowel trouble.

The cecum, from its position and if bands of adhesion have formed around it, empties very imperfectly. The caput coli, according to plumbing nomenclature, is the trap of the large intestine.

Ammoniacal decomposition and large flora of bacteria tend constantly to form in this region, if the bowels are not kept regular. The appendix contains more lymphoid tissue than any other part of the intestines, this also rendering it more susceptible to infection.

Note the number of your patients that have white lines (or

what some of them call bruises) on their finger nails, which denote some disturbance in the gastro-intestinal tract, and inquire of them if they ever had trouble of any kind in their right inguinal region. Many of them will answer: "I had some trouble once or twice, but I only feel now and then an occasional pain in my side." You may elicit pain on pressure in these cases.

A few cases, having a few attacks of ptomain poisoning, will feel pain around the appendix region on pressure for a few days after pain has subsided in other parts of the abdomen.

It was at first thought that infection was the primary disturbance in the development of appendicitis, from the anatomy of the appendix and observations at operations finding in them, even after a history of repeated attacks, very little evidence of trouble outside of dilatation of the capillaries on the surface.

How is this explained?

During development of the intestines in the embryo, the appendix shares in the same structure as the colon; development continuing, the appendix remains small, while the colon enlarges. In extra-uterine life, if for any reason a spasm of the colon comes on, either directly or reflexly, contracting the circular fibers, the contraction will be felt around the base of the appendix, interfering with the passive or venous return, dilating the capillaries and giving rise to slight or very marked attacks of pain, which may subside in a short while, to appear again in a shorter or longer interval, causing the patient to feel in doubt as to whether his appendix is at fault; or the capillaries may remain detached, giving pain constantly or on pressure, and the patient remaining conscious that he has an appendix. A fecal concretion or other foreign body may be sufficient to bring this on. The circulation may be cut off altogether and infection set in, explaining the different degrees of infection and gangrene from a slight thickening of the mucous membrane or perforation in spots, to one of complete destruction. These cases, no matter how mild, should be operated, for we now have a spot of lowered resistance inviting infection.

If we will get a careful history of our appendicitis cases, we will, in the majority of them, find histories of long-continued bowel disturbances, either chronic constipation, belching or marked tympanitis. This is sufficient to give rise to constant distention of the colon-forming adhesions, even before any

symptoms of appendicitis come on. The bowels should move twice daily to be in perfect order and allow no accumulation to remain for absorption. In a case of this kind appendicitis is an exception.

The surgical side of appendicitis:—Our incision should be long enough to thoroughly explore for any adhesions. Why should we advise our patients to have their appendices removed? Apart from the appendix becoming diseased, secondarily to bowel disturbance, it now becomes a focus for infection and if badly infected may be the cause of secondary involvement of the stomach, as ulcers or trouble in other regions. At operation all raw surfaces should be carefully covered with peritoneum, when possible, and the suture lines smeared with sterile vaselin, to prevent further adhesions to the raw surface.

The care and advice to the patient after operation:—If it is true that many cases of appendicitis are preceded by long-continued trouble of the bowels, which seems to be a fact, should they expect to feel perfectly well after the appendix is removed? They should be told that the removal of the appendix alone is not expected to cure the chronic intestinal trouble they have suffered from, but to remove a source of pain, a danger to his life and a possible cause of secondary irritation to his old trouble.

The post-operative history in these neglected cases is far from music to the surgeon's ears.

If the case has been referred the doctor should be advised by the surgeon and the patient should be impressed that he must be under observation and regulate his diet and mode of living for several months, as he will be prone to develop adhesions, and his bowel conditions, especially constipation, made worse, and pain continue after the operation. Take a case for example that has suffered from bowel disturbances before developing appendicitis. He is operated and no care taken in his after treatment. His condition will be benefited for a while, after the operation. Why? Because, after operating, his diet is regulated while under observation. After discharging him, no advice is given, or he neglects his diet and all of his old symptoms return, with probably formation of adhesions, and he will tell you that he feels as badly as before the operation; in fact, he is more torpid.

In conclusion, I would state that if all of our cases are advised along these lines, I feel sure that fewer would go to the operating table to be operated a second time for adhesions.

SOME PROBLEMS IN PSYCHIATRY.*

By MARCEL J. DE MAHY, M. D.

Clinical Professor of Nervous and Mental Diseases, New Orleans Post Graduate School of Medicine; Junior Neurologist, Touro Infirmary, New Orleans, La.

"Psychiatry, beneath an evident wealth of clinical phenomena, conceals gaps and uncertainties that leave its most essential problems unsolved." The awakening in psychiatry may be said to have occurred towards the end of the eighteenth century. Its evident activities during the Greek and Latin civilizations gave way under the religious and philosophical prejudices of the age that repress all tendencies opposed to spiritualism.

Psychiatry slumbered, disturbed only by a few abortive efforts at an awakening that accomplished no real progress and was sterile of any new acquirements.

It is unfortunate that medical science may not lay claim to the initiative in the effort at reviving any interest in the proper care of the insane. It was rather the keenest of social sensibility that demanded the establishment of the asylum, and so created the alienist.

We see the pioneers in psychiatry finding themselves in the presence of diseases, rich in external manifestation, as demonstrated in the speech and conduct of the insane—readily evolving a perfect medley of psychoses and terminology.

Ignorant of the limitations imposed by the medical knowledge of this age, which lacked the present modern collateral knowledge, and biased by the facility in observation, it is readily understood that one of the greatest problems facing the psychiatrist of a later period, and of to-day, was and is a weeding out and proper classification of mental diseases.

Emerging from the sea of confusion created by the pioneer psychiatrist, who resolved his classification upon the basis of the obvious symptom only, we are confronted by those who, while still adhering to one point of view, seek only within the narrow bounds of the psychological, or the pathological, or the etiological, or the clinical for the determination of a proper classification.

The present classification of mental diseases, however, leaves much to be desired. Every author of note has put forward his

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own, resulting in some cases in such a salad that it is beyond mental digestion.

An attempted solution of the problem of classification is made by most psychiatrists, when the subject is approached from all sides, and the psychological, pathological, etiological and clinical are considered, and a nomenclature determined that seems best fitted to an intelligent interpretation of the diseased state.

It is not within the province of this paper to offer any solution to this problem. I doubt that our present-day knowledge of the psychoses permits any correct solution. Nevertheless, it must not be overlooked that psychiatry, marching along with the progressive spirit inspiring the advances in other departments of medicine, has done much towards the correction, but more towards the application of scientific principles in solving our most difficult problems within the sphere of mental disturbances.

The student, in the pursuit of his investigations, ascertains the existence of certain fixed principles which assume a position of the first rank and asserts their influence upon all associated inquiries.

The biologic classification into familia, genera, and specie, based chiefly upon symptomatology, has given way to a more individualistic trend. Mental states are regarded as a reaction to a grouping of ideas about a definite event, the emotional content of the event creating the relationship of interdependence that one idea bears to the other.

This synthetic arrangement of ideas thus establishes the mental state. The resemblance borne by this fundamental conception to the chemical compound leads us to hope that we are treading the proper pathway leading towards the desired goal.

Another problem facing the psychiatrist, and one apparently simple of solution, is the obtaining of a more active co-operation from his co-workers who come into intimate contact with the patient.

The prophylaxis of insanity must, in a great part, depend upon the primary observations made outside the realm of specialism.

To attain this end, it becomes the duty of the psychiatrist to encourage closer attention to details of a mental character that make themselves evident to the medical observer, if he but remember that man is a psychophysical organism.

"This is the great error of our age in the treatment of the body, that physicians separate the soul from the body."—Plato. Twenty-five centuries ago, Plato, the pupil and interpreter of Socrates, the teacher, and later the rival of Aristotle, found himself driven by the shortcomings of the medical methods of that period to give utterance to the above quotation.

And even unto our day the same quotation might be applied, if not with equal, at least with a great deal of emphasis.

I would venture to assert that the mental status, or possible mental reaction, is very seldom, if ever, taken into sufficient consideration by the greater number of workers in the various departments of medicine.

The blue penciling which boldly and daringly exposes the abnormal behavior of some of the internal organs, while of inestimable value to the diagnostician, is often fraught with unhappy results to the patient's mental equilibrium. Here the importance of familiarizing one's self with the mental status of the patient will often prohibit any suggestive error that might create a psychic neurosis, which may remain as such, or be projected by a splitting of the personality into a definite psychosis. The thoroughness with which most physical examinations are made often serves to emphasize the neglect with which the mental attitude of the individual is treated. It is not to be expected that a complete mental examination be made, but it might be pleaded here that the importance of the mind be given more consideration.

When one considers the comparative simplicity attending the structure and function of some of the most important systems of the human organism, the structure and function of the brain appears indeed appalling in the indisputable complexity of its functions and the deceptive homogeneity of its structure.

"With sufficient accuracy, the function of the heart may be compared to a pump, the kidney to a filter, and the eyes, to a system of lenses, but the biological significance of the brain does not permit of being adequately expressed in such ready formulæ."

"The brain distinguishes, beholds, hears, smells, tastes, touches, thinks, imagines, and reasons; it hesitates and wills; it suffers and rejoices."

The very multiplicity of its activities certainly cries out for attention; and even if they be but imperfectly understood, they deserve the closest attention from a body of men trained to attach importance to every abnormal manifestation occurring

within the sphere of the diseased state. It is not the body, it is not the mind; it is the individual, and we must not make two parts of him. We are very often forced by deplorable catastrophes to give heed to mental reaction upon the physical life of the patient. What is more feared by the surgeon than the patient who is so filled with pessimism as to his condition that he confidently anticipates death? Many a keen observer within the domain of surgery will refuse to operate if it be not imperative, remembering past experiences where such a mental reaction played a great and important part in determining an unfortunate finale totally unexpected. Again, we find the emotional reaction catered to by the surgeon when he stoops to a felony and steals the thyroid.

An effective stimulation of the medical profession along lines that encourage attention towards the mental aspect presented by a given case would result in incalculable benefits to both the patient and the physician.

DISCUSSION.

Dr. I. Browne Larose: I have greatly enjoyed Dr. De Mahy's paper, and regret that there are so few present to hear a paper of such merit. I will appreciate a classification of insanities by Dr. De Mahy.

Dr. W. H. Seemann: I am very much in the position of Dr. Larose, although I am not able to add to or take from the paper, I have greatly enjoyed it, and thank Dr. De Mahy for bringing out the points that in our routine and thorough bodily examinations, the patient's nervous status is not considered, nor is the effect of such an examination upon his nervous system considered.

Dr. De Mahy (in closing): I wish to thank the several speakers for their complimentary remarks. I have no original classification of nervous disorders, such a classification can be found in the various books on the subject.

REPORT OF A CASE OF HEMATURIA RELIEVED BY INTRAVENOUS INJECTIONS OF EMETIN HYDROCHLORID.

By J. FRANK POINTS, M. D., New Orleans.

Family History: T. J. M., white, male, age 50. Does not know of any bleeder in any previous generation. Mother died at 47 of yellow fever. Father died at 54 of heat prostration. Two sisters

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died in infancy; cause of death unknown to patient. Had three brothers, none of whom were bleeders.

Personal History: Patient first discovered he was a bleeder when he was a child, and had a tooth pulled. Whenever he had any teeth extracted, his gums would bleed most freely, the hemorrhage sometimes lasting two or three days and necessitating the use of a gum-clamp to stop its flow. Knowing his predisposition to bleed he was always very careful to avoid wounding himself. In late years patient suffered from an attack of purpura hemorrhagica. About two years ago he was taken with a slight attack of hæmaturia which lasted ten days. At that time he did not consult a physician, but confined himself to bed, and the hemorrhage gradually stopped of itself.

Present Illness: On September 29 of the present year, patient noticed on rising that he urinated blood. He continued to pass blood all that day, and, on the morning of the 30th, seeing that the hemorrhage had grown worse, sent for me. When I arrived at his home, he showed me a vessel of urine that was so bloody until it looked almost black. Inquiry brought out the answer that he felt perfectly well, had no pain in his bladder or over the kidneys and did not have to strain to urinate—his urine flowing freely. He had no fever, his pulse was 80.

He refused both cystoscopic and rectal examinations. I injected 1000 units of normal horse serum subcutaneously, and gave him potassium citrate, grs. xv, and urotropin, grs. v, every four hours. On the second day after the injection, the hemorrhage stopped entirely and the urine remained clear for 24 hours. The next day the urine became blood red again, and remained so for thirty-two days. During this time I gave at different intervals lactate of calcium in 10-grain doses, calcium chlorid in 15-grain doses every four hours; adrenalin in 10-minim doses hypodermatically; gallic acid, grs. x every four hours; tinct. ferric chlorid, drops xv, t. i. d.; fl. ext. ergot, m xxx, every four hours; glucose by rectum every five hours, and gelatin by mouth. All these remedies were given a fair trial without any apparent diminution in the quantity of blood voided. During this time I had been having daily debates with my patient relative to another dose of horse serum. He was apprehensive that a second dose might produce hives, or bring on a subcutaneous hemorrhage, and, at first, would not give in. At last, seeing that all other remedies failed, he submitted to a second injection. The result was that in twelve hours the hemorrhage diminished about one-half, but did not clear up entirely, as after the first injection; and in twelve hours more, was on again in full force.

By this time patient was showing the effects of loss of blood, his blood pressure going down lower every day and his pulse mounting higher.

In my quest for a remedy I read of the great results derived from the use of ipecac and its alkaloid, emetin, in cases of hemorrhage. I at once procured a supply of emetin in ampoules of one-half grain each and gave my patient two doses a day, eight hours apart, subcutaneously. The subcutaneous injections had no effect at all, the urine remaining as bloody as ever. The fourth day I began by giving ½ grain of emetin intravenously, selecting a large vein at the bend of the elbow. I repeated this injection that evening eight hours later. Two more injections were given on the fifth day and one on the morning of the sixth day. During all this time patient's urine showed no improvement. But, on the evening of the sixth day, the urine became so much lighter in color that, in spite of all my entreaties, I could not induce my patient to take another dose, he being firmly convinced that this was a favorable omen, and the bleeding would now stop of itself.

But next morning the urine was as red as at the beginning. Patient then declared his willingness to submit to my suggestions without any further question. I gave him two injections of emetin a day intravenously for two and a half days, and, on the evening of the third day, as on the previous occasion, the blood diminished about one-half. But he was docile, and took a sixth injection that evening, and a seventh the next morning. By that time his urine looked almost normal in color, the albumen had reduced to ½%, and I decided not to give any more emetin until I would see him that afternoon. On my return his urine was perfectly clear and has remained so ever since, some six weeks.

During the attack patient repeatedly refused a cystoscopic examination for fear the instrument would traumatize his parts and make the hemorrhage worse. For the same reason he feared a rectal examination of his prostate would aggravate his condition, and so would not consent to a digital palpation of the gland. Urinalyses, which were made frequently, revealed nothing but large quantities of albumen, the highest per cent. attained being 15; but I argued that this was due to the presence of blood. As the urine cleared up, the albumen rapidly disappeared. Patient objected to being punctured for a blood puncture; but on examination of the blood from the urine no malaria plasmodia were

found, and the absence of hemoglobinuria was demonstrated. At the beginning of the trouble patient's blood pressure was 125 and pulse 80. Towards the end his blood pressure had gradually dropped to 70 and his pulse increased to 135. At first, he was frequently nauseated and vomited, and had to be given repeated courses of calomel and also anti-emetics to settle his stomach. Patient had lost so much blood that, when I came to give him the intravenous injections, it was very difficult to get the veins distended sufficiently to introduce the needle.

DISCUSSION.

Dr. Walther: I wish to congratulate Dr. Points on his paper. I do not question his diagnosis in this connection. I am reminded of the fact that reports of cures have been often made by the proprietary manufacturers, and the results have proven disappointing to those of us who have tried the several modes of treatment. In two cases of purpuric hematuria, every medical means known to us was tried, but both cases proved fatal. Dr. Points is therefore to be congratulated upon the happy termination of the case.

Dr. Salatich: Only those who have seen and treated these cases can realize the difficulties encountered. In a case of hematuria some time ago X-ray plate showed presumably a stone in the right kidney, and second plate apparently corroborated the first. Upon operation, however, there was no stone found. The case, however, apparently recovered.

Dr. Points: In closing, I wish to thank Dr. Salatich and Dr. Walther for their intelligent discussion of my paper. I feel that emetine is a valuable addition to our armamentarium, and is only now coming into its own. The hemostatic action of ipecac has been known for many years, in fact, references of it can be found, made by Bartholow in the eighteenth century.

REPORT OF CASES.

1. RETROPERITONEAL APPENDIX. 2. VOLKMANN'S ISCHEMIA. 3. CASES ILLUSTRATING TYPES OF GROWTHS SEEN IN A CLINIC AND THE TREATMENT.

By ISIDORE COHN, M. D., F. A. C. S., New Orleans.

The following cases were presented at the meeting of the Touro Clinical Society, October 5, 1915:

RETROPERITONEAL APPENDIX.

Clarence S., white male, age 21 years. Clinical diagnosis acute appendicitis.

History: He had had pain for twelve hours when I first saw him

at noon, Sunday, September 5, 1915. The doctor in attendance had given him half a grain of morphine to relieve the pain. The temperature at noon September 5, 1915, was 101; pulse —

Examination of the abdomen disclosed a marked rigidity of both recti, but particularly the right. Immediate operation was advised and he was moved to Touro.

The leucocyte count was 18,000.

OPERATION.—The right rectus incision was made. On opening the abscess about two ounces of a seropurulent material was seen lying in the iliac fossa, to the right of the cecum; the cecum was covered with flakes of fibrin.

After protecting the cavity as well as possible, a search was made for the appendix. The parietal peritoneum of the posterior abdominal wall covering the right iliac crest and above along the psoas muscle was infiltrated and very pliable. A small mass resembling the base of an appendix could be seen leaving the postero-lateral aspect of the cecum. The abdominal incision was lengthened upward. The cecum could not be mobilized. The parietal peritoneum was then incised in an upward direction and a short appendix, which seemed ready to perforate, was found. Practically no meso was found. The appendix was removed in a retrograde manner; a drain was left in the space behind the peritoneum and one in the pelvis.

This case is of interest because of the *rarity of retroperitoneal appendices,* and, second, because it *calls to mind the possibility of an abscess from a retropcritoneal appendix simulating a psoas abscess by pointing below Poupart's ligament.*

N. B. The patient made an uneventful recovery and has now returned to work (October 5, 1915).

VOLKMANN'S ISCHEMIA.

Arthus W., male, age 9. No. 11448. Diagnosis, Supra-condyloid fracture.

On March 16, 1915, fell from a gallery 4 feet to the ground. His arm was abducted during the fall. He was treated in the emergency clinic at Touro. The position of the hyperflexion was used; the bandage applied extended from the wrist to the axilla. A narrow sling was applied around the wrist.

The next day the only change that was made was to include the hand in the bandage.

On March 27, when the position was changed a right angle, it was found that there was evidence of pressure ulcers at the seat of the original *wrist sling.*

Basal celled carcinoma—Result of Operation.
Fibro sarcoma of scapular region—Apparatus for ischemia.

ARTICLE OF DR. COHN.

From time to time attempts were made to gradually extend the forearm; after five weeks it was found that we could not obtain more than a range of 45°; that is, from 90° to about 130° to 140°. There was loss of sensation in the peripheral distribution of the musculo-spiral beyond the level of the pressure ulcer on the dorsum of the wrist. A little later a typical conracture of the Volkmann type became apparent—the rigidly flexed wrist and flexed fingers.

The patient was referred to the neurological department, with a diagnosis of mixed sensory paralysis, due to inclusion of the musculo-spiral nerve in the scar, and a Volkmann's contracture.

After improving the sensory phase of the case, Dr. Van Wart turned him back for some surgical procedure.

In August we had made an apparatus described by Emory G. Alexander, of Philadelphia (possibly originally suggested by Mr. Jones, of Liverpool). The apparatus consists of a leather cuff for the forearm, reinforced by a straight piece of steel which extends to the upper lmit of the cuff from the wrist. There is a movable wrist joint. The hand lies on a steel plate which is covered by a leather pad. Extension of the wrist is obtained by using a thumb screw.

The child has worn the apparatus for six weeks. The result up to the present time shows the value of the apparatus—the circulation is better, the wrist instead of being flexed to a right angle can be extended to about 130, and the fingers are straight, with no tendency to a spastic contraction when released from the apparatus. He has some voluntary motion of the fingers.

PLASTIC OPERATIONS DONE IN THE CLINIC.

Many interesting opportunities present themselves in the clinic for the application of the principles of plastic surgery. I have selected four cases which illustrate the extensive nature of some of these cases.

Case I. Mr. C. A. H., white male, age 69. No. 11584. Diagnosis carcinoma basocellulare of face. The patient was referred by Dr. Roussel.

History. For the past seven years he has noticed a small ulcer under his right eye. A scab would form and this would come off from time to time without bleeding. The depth increased slowly. Doctors used various agents to cauterize it (carbolic and nitric acid —the actual cautery), but in spite of them the ulcer increased in

size. On April 17, 1915, I excised the ulcer, with a good margin of healthy tissue—the plastic was done at the same sitting. (N. B. Novocain ¼% was used.) After the wounds had healed, the X-ray was used.

The patient has no ectropion, nor any facial paralysis. Further the skin is now freely movable over the face.

Case II. Martin E., age 46, No. 12288. Diagnosis: Undifferentiated epidermoid carcinoma.

8/3/15. Patient was referred by Dr. Roussel. Three years ago he noticed a small pimple on the left side of the face. No pain was associated with the growth. About one and a half years ago, the growth began to increase in size, a scab formed on the surface, which when removed would leave a bleeding surface.

Examination: There is an ulcer about one inch in diameter between the outer canthus of the left eye and the ear. The base is granulomatous—the edges are undermined, the surface bleeds easily. No glands are palpably enlarged.

Operation: Touro Surgical Clinic, August 5, 1915.

Anesthesia: The surrounding area was infiltrated with novocain ¼%.

A large incision was made, including at least one-fourth an inch healthy skin margin in the excised area. After removing the growth, it was decided to do the plastic operation at a later date. One week later, using novocain ¼%, the raw surface was covered by sliding flaps and undermining skin margins.

September 27. Wounds all healed. Patient discharged.*

Case III. Miss Clara T. Age 63. Clinical diagnosis: Carcinoma baso-cellulare.

For the past 16 years she has had a sore on her left shoulder, which she attributes to a mosquito bite. Iodin and like remedies were used by the patient. Fourteen years ago the ulcer was about one inch in diameter. During the past two years it has steadily increased in size. At times there has been a bloody discharge—no pain.

Examination: There is an irregularly shaped ulcer extending from the acromeal end of the clavicle to the vertebral end of the spine of the scapula; downward, the ulcer extends about two inches below the spine of the scapula; the edges are elevated; the base presents a granulomatous appearance. A diagnosis of a Basal cell carcinoma was made.

Using ¼% novocain infiltration anesthesia, the mass was excised with everything down to the muscles. The plastic work

*N. B. This case is interesting aside from the extensive plastic work, because the original lesion was typical in every way of a Basal cell carcinoma or rodent ulcer, and yet the pathological report by Dr. John Lanford negatives that diagnosis.

was not done at the first stage. About one week later a large tongue-shaped flap from the vertebral side was turned into to cover the raw surface; besides this we mobilized the skin of the supraclavicular region as well as that of the infraspinous region. After a few days there was some retraction of the flaps, then it was decided to skin graft. Three weeks after the second operation the anterior crural nerve was exposed and blocked with ¼% novocain. It was then an easy matter to remove Thiersch grafts from the inner aspect of the thigh. The grafter area was treated in the same manner as a burn, i. e., no dressing; patient was kept under a bar and the part was kept free of secretion. The grafts have all taken and the patient is now well. (October 5, 1915). N. B.*

Case IV. L. P. Fibrosarcoma of scapular region.

History: Four years ago she had a growth removed from the scapular region. Two years ago a similar mass appeared near the site of the original tumor; this has grown steadily; it has bled freely. Pain would be noted only when she would dress it. She has lost weight.

Examination: Emaciated colored woman. There are several tumor masses varying in size from a diameter fo one inch to three inches. The skin surface covering the tumors is glistening and in places the skin has ulcerated. The skin moves with the mass.

The mass was removed at the Illinois Central Hospital, using novocain ¼%. The plastic was done at the same time. Healing was primary and we have now lost sight of the patient.

Orleans Parish Medical Society Proceedings

DISCUSSION AT MEETING OF NOVEMBER 6, 1915.‡

Dr. W. H. Knolle: I have not prepared a written paper, because the subject allotted to me can perhaps be best answered in detail by reference to the remarks of the papers preceding my talk.

My subject is "The Abuse as Viewed by a Non-Visiting Member" —the man strictly on the outside of the hospital. The medical cases that go to the hospital are few, unfortunately for the public; they are not, as a rule, so interesting to the doctors, but if there was

*N. B. **The intra-neural anesthesia was used in preference to infiltration to obtain the grafts as it does not interfere with the blood supply in the area to be utilized as grafts.**

‡[Received for Publication January 12, 1916.—Eds.]

more room at the hospital and more medical cases took advantage of it, it would certainly be a relief to the every-day hardships the outside man sees continually. I am sure that the abuse is very great, and it is very great from this cause, and perhaps from this alone. The public wants and feels that it is going to have the service of specialists, the moment they go to the hospital they feel equally sure that they cannot pay the specialist's price outside. The prevailing opinion among the public is that it costs $3.00 to look in and $5.00 to turn around. This is very unfortunate, for the specialists are not in that class, but that is the prevailing opinion. The first thing mentioned to the family doctor by the average class of people is, "I cannot possibly afford to pay for that kind of service." The next thing that strikes you very forcibly is that if you have been asked to attend a child, or look at it, and it does not do better in just the very shortest possible time, they are going to take it to the hospital and let the specialists look it over. Of the eye, ear, nose and throat troubles that come under the care of the general practitioner, I believe easily between sixty and seventy per cent go to the Charity Hospital. Some don't stay there, but as far as I have been able to calculate, that is about the percentage who go there to see the specialists, for the same reason that they cannot afford the fee.

It is not so much in gynecological work. Why? Because the middle class of people ignores the importance of it. If we could send more of the obstetrical work to the hospital, it would be of vast benefit to the community at large.

The surgical side covers, I presume, ninety per cent, when it comes to hospital abuse. First aid was referred to by the gentlemen who have preceded me. I daresay that I, or the outside man, do not get to see one case out of fifty that has been given first aid in the hospital, and who is then referred to his family physician, even if they made inquiry to find out whether that family physician was competent to look after him afterwards or not. He gets his treatment, is advised most strenuously to report to the clinic day after to-morrow, etc.; we never get to see that case until he is discharged as cured. Even getting down to the minor injuries or perhaps a nail in the foot, where some serum has been given, or it may be an ulcerated wound that has been sutured, they never confine themselves to the family physician, whoever he may be. They always come back to the clinic until they get well. That is an abuse that should not be. It is not always the poor man that gets hard up; almost everybody goes to the hospital, and why not refer those cases subsequently to somebody to take care of? You might make two, three, five or ten dollars out of some of these, but it is the same rule invariably, they go back to the clinic. In the operative cases that present themselves in our daily routine work, as we know, those of hernias, hemorrhoids, and all others, we almost invariably get the same answer. 'I cannot afford to go to the sur-

geon; I cannot afford to have this done, because it is going to cost more than I can pay."

Now, our first aid to ourselves as well as to the public in this matter, is going to be to disabuse the mind of the public, and we are going to need for that a remedy, and that remedy lies with the profession at large, but principally with the surgeons and the specialists in every line. The general practitioner, the outside man, who meets those cases from day to day, can say to this or to that individual: "You have to have such a kind of an operation, you must have service of this character or that, and if you will go to"—don't make it a specific rule. Don't tell them to go to any special man, but give them a line on a half dozen men or more and tell them they can consult any one of these gentlemen, saying that you referred them. You may say to the patient these surgeons or specialists will treat him right. You should treat them right, gentlemen; do a piece of work for $25 or $30 which you ordinarily expect to get $75 for. It is vastly better to make that $25 than to do it at the Charity Hospital for nothing. I have known innumerable cases, and I see them yet, who are on their feet but need surgical attention, who all drift into the Charity Hospital purely from the question of cost alone. If we can just educate the public, we can disabuse their minds along the line of the prices of the surgeons and make them certain that the doctors are willing to practise according to the means of the individual. So much of that Charity Hospital work can be eliminated, and everybody will be benefited more or less.

The papers dealing on the question have been so thorough with what is done in the open hospital and the clinics, that I find myself unable to add anything to that question from the viewpoint of the outside man.

Mr. Henry Rightor (A guest of the Society): Only this: I have spoken to some of the gentlemen connected with the Board of Administration of the Charity Hospital, and have suggested to them that the solution of this difficulty would seem to be what I have indicated in my paper, the charging to the employers of injured industrial workers for services rendered them. I have been surprised to find that they seemed disposed to antagonize that idea, but I have not been able to get from them any good reason why it should not be done. Now, it does seem to me as a business proposition that this question should be reduced to a determination of how it is going to be done. The practical thing to do is for the man at the door of the hospital to take from each injured man as he comes in a statement of the name and address of his employer, what the character of his employer's operations is, and then simply compare that information with the act, and if the man is found to have been injured in an occupation covered by the act, then, the Charity Hospital, or individual doctor, as Mr. Tipping has pointed out, is certainly entitled to compensation for services rendered to him and

should bill out accordingly. That, Mr. President, is all I have to say in the way of putting forward a practical suggestion, and I thank you very much for your attention.

Dr. Wilkins: This is a tremendous proposition for any one to take up off-hand. Several sides of this question have been talked about, but, from the side of the hospital, I think that hospital abuse is exaggerated, and it has been proven so in a great many investigations throughout the country. Dr. Danna quoted one that was made very carefully. I personally know of a hospital in a city about one-half the size of this where for one year every patient who applied to the clinic was investigated, and less than two per cent were found to be cases of hospital abuse. On the other hand, there are many glaring cases of hospital abuse in the Charity Hospital. Several of them have been called to my attention.

The question of the workmen's compensation act, of course, is a very vital one. I think the opinion of the board when this law went into effect last winter was that they would watch the condition of affairs, and see what the result would be, and then when they came to some conclusion, they would eliminate any evils which had cropped up. I can see where they can now make arrangements by which the abuse can be stopped, especially the abuse of the clinic; that my attention has been called to it throughout the summer, and considerable data has been collected. In the question of treatment in the house, as Mr. Tipping said, that two weeks clause is a vital one to the man back in the country. He can be treated for two weeks, and then what is he going to do? That is a problem when a man is back in a logging camp. I do not know that I can talk on about this, there are so many things to speak about along the whole line of hospital work. I would be very glad, if later on, there are any discussions, to answer any questions that might be asked me.

Rev. Dr. J. C. Barr (a guest of the Society): Mr. Chairman, I came here to-night as a learner. I gladly acknowledge that I have not come in vain, but have gotten a number of excellent ideas. One of the best suggestions made, in my opinion, was that as we deal with this problem of hospital abuse, there ought to be co-operation between the various institutions, and I hope that one of the fruits of this meeting will be the launching of such a scheme. The Presbyterian Hospital is one of those that will co-operate to reduce this abuse. Our institution is among the youngest of the charities of our city; but it wants to do its full share of the great work waiting to be accomplished. It fully recognizes that it has a duty to the people, to the poor, and to the physician. You may call on us to co-operate with you in any way that you deem best, and we assure you, in advance, that your request will meet with a hearty response. You may rely on the Presbyterian Hospital not only to do all within its power to relieve the sick poor, but also to stand by the physician and defend his rights.

Mr. Orloff Lake (a guest of the Society): I have listened attentively to the papers that have been read, and your symposium here this evening seems to be entirely according to the subject, "The Abuse of the Charity Hospital."

There is no question that the majority of your fraternity, which has done such incalculable good to the City of New Orleans and to the State, realizes that there are abuses at the Charity Hospital; otherwise you would never have taken this action and have gone into your investigation and such a report as was made to-night would not have been made.

The Charity Hospital has a unique position in the State of Louisiana. It stands for just exactly what it says: The **Charity** hospital. Everything that is done there is given and the splendid services of your honorable body and the magnificent skill of your great surgeons and physicians, who have given their time free—I believe while they are benefited by the gift, they have done it from an altruistic principle and I do not believe that they are led by any individual aggrandizement. True they realize the fact that they are benefited, that it is a great institution and while they are being benefited they also realize the fact that they are benefiting others who do not go there; in consequence of the information they receive and the knowledge that they write down for history and for the benefit of others that read it. Therefore, listening to the remarks of Mr. Rightor, the Charity Hospital, I fear—and I am not speaking **ex cathedra**, would bring an injury upon itself if it tried to charge for anything that it does. I honestly believe that when that route is started into, dissensions will at once arise and, under the circumstances, there is more good coming from the full fact that it is a charitable institution carrying along with it the absolute meaning of that word, than if it were to go to the insurance companies and to the manufacturers and the employers and say to them according to the Employers' Liability Act, "We hold you responsible and are going to render you a bill."

Is it not very much easier to say to them, "Send your patients to the other institutions." That would eliminate this and that is what we want done.

Now, another thing. I do not believe it is charity to train a man to say he cannot when he can. I do not believe that it could be the right thing for us to say that we have no right to inquire into and to say to a man, because he feels he cannot, that he cannot. We realize that we are imposed upon when the parties do not really believe they are imposing and many think that they have the right to the service though able to pay; and there is also no doubt that many come because of the skill in that institution, for on its list there is as fine medical talent and surgical skill as you will find in any city and in any institution. Is it not natural, therefore, that people should wish to go there? But the capacity of the institution is

taxed, taxed to such an extent that two are sometimes found in the same bed.

Is it right, gentlemen, that people who can pay should go to this institution for the curative effects and operations of the medical fraternity and the care that institution is trying to give to the poor?

Is it right when they admit people who can go to other institutions and who take up the room set aside for the destitute patient?

But, on the other hand, I am confident that the institution is not going to shut out a man who needs attention and who needs it immediately. No man would say, "No, go somewhere else." But after that immediate attention is given, why not find out whether that person can pay for treatment on the outside?

Now, there is another way of looking at this thing; the doctors give their time to the institution. Is it right to them who give their time and skill and thereby establish a fine record for the treatment of cases in that institution for the institution to receive and treat patients who are able to pay the doctors, knowing that they can get as good treatment there as they can anywhere in the land and possibly served by their own physician for which they would have to pay if treated on the outside?

Another thing with reference to the Charity Hospital is very important, which has already been brought out, and yet, at the same time, it is a mistake with reference to the manner, from the layman's point of view, in which they look at it. The Charity Hospital in a way cannot do what the other institutions are doing. It cannot say to a man, "You can afford to pay, go over in this ward." What are you going to do with reference to it? What we want out there is to have more room for those who absolutely need attention and are not able to pay for it. That is the situation, and I believe that is the meaning, added to your right in being protected, which prompted you in establishing an investigation to determine whether or not we are taking people who can pay.

Suppose there should be a charitable institution in this town which would say to everybody, "We will buy this and that for you because you cannot afford to pay and then you begin to let others slip in and come in, you don't believe that it would be a most uncharitable institution, that could be possibly turned loose in any city?

It would do good, yes, but it would also be stamping out manhood and independence and would build up such a community that the few who are willing to work and will work, and who want to pay for what they get would bear the load that they have no right to carry.

I believe, gentlemen, that this movement, while, of course, you are not going to have it perfect in the beginning, will result in good from every angle and will help our great institution, which has been improving right straight on up to the present time, improving step by step and I trust will stand more and more for efficiency and

splendid help for our poor and be a monument for good to our beloved city and state—that is the meaning of it.

Now, as a manufacturer, I know just as well as you all know, and possibly a little bit better, that every time a needle goes through a fabric, there is value put into that fabric, and every time that you bring someone out to the hospital, no matter how little the attention given, it is a cost to that hospital, and our money comes from the people, and we, as administrators, are trying to make it go to the poor people just as far as it is possible.

Understand me, I am giving only my own ideas, though I feel very confident that I am speaking very closely to the ideas and opinions of the members of our board.

At the time that this board came into existence, the very first thing that they learned was that it was a precedent of that institution, an established custom which is almost stronger than law, that you cannot refuse anybody to that institution. That is the reason of the investigation that took place which brought out the fact from the Attorney General's officce that the administration has a right to try whatever they think will be to the benefit of that institution, and with the noble assistance that they are getting from you good men who give your ime and give your services, and I will accentuate it again, from altruistic principles, we are on a fair road to give the greatest good for the least money to the greatest amount of poor people.

Dr. J. George Dempsey: After listening to the splendid papers of the members of our fraternity, their invited guests, also the remarks of Mr. Lake, permit me to tell you of an impression I have had for years of the Charity Hospital.

Many years ago the Charity Hospital had pay wards. After some time the board realized that the abuses were very great, and so they abolished the pay ward system, and placed all patients upon the same footing. To-day we have another abuse, which is just as great, the sending of insurance company patients to the Charity Hospital. These patients naturally expect to get more than the indigent patients, who are justly entitled and deserving of assistance, because they know they are being paid for by the insurance companies. The Charity Hospital was never intended for this, its donor gave it for the indigent; those who are able to pay should not be admitted.

We have many other institutions, where patients can pay and be treated, and receive all the attention they may require, and we, as members of the Orleans Medical Society, should insist upon it.

One solution of this problem would be for the Medical Society to employ some one to take the names of the people and start an investigation. We are divided into districts and we can tell just who is deserving of charity and who is not. I say as a member of the Medical Society, therefore, and also from a medical standpoint, I do not think the hospital should be permitted to receive patients or

fees from those who are able to pay in some of our pay institutions, thereby depriving some poor patient of bed and treatment.

Of course I do not mean emergency cases, first aid and relief should be administered, but I am opposed to subsequent treatment.

Dr. Arthur I. Weil: We have had some very interesting papers this evening, and some very interesting discussions, but from the way the meeting has gone so far, it bids fair to follow the precedent of so many of these meetings on questions of public interest. Everybody is interested, nobody particularly responsible, and it seems possible that this meeting also, after the expression of these views, may result in no definite action being taken, and I would suggest that as the outcome of this meeting, the presidnt of the Parish Society be authorized to appoint a small committee to carry out the suggestion of Mr. Tipping because, after all, I think the main solution of what has been said to-night, is the fact that nothing can be done except by co-operation between the institutions. One institution alone can bring no reform, and I suggest that the president of the Parish Society be authorized to appoint a small committee to act in conjunction with the superintendents or constituted authorities of the various hospitals throughout the city, to formulate tentative plans, and see what can be done to control this matter of hospital abuse in such institutions, and then possibly to report back at a future meeting with some definite plan by which the abuse may be corrected.

Dr. S. Chaille Jamison: We have had a good deal of theoretical discussion here. We have never had any discussion from the men who run the out-door clinics. I can say for my clinic, which is a negro female clinic, which I have run for several years, that there is practically no abuse on the part of the patients. The abuse comes in, in patients coming to our clinics wanting us to sign society papers, who tell us that they have been examined by four or five society doctors, and no conclusion has been reached. They have never been thoroughly examined when you come to investigate the case at all, and if the Charity Hospital is being abused, as far as my clinic is concerned, and it is one of the biggest, it is being abused by the societies and society doctors, and not by the patients themselves. It has even gotten to such a point that these patients come in with the request to us to have a Wassermann done, etc., and the patients themselves have nothing to do with the abuse; it is the societies and the society doctors.

Dr. P. B. Salatich: I believe that we ought to come to some definite conclusion as to what to do. I think that if there was a committee, or a man paid to investigate each patient that applied for treatment at the Charity Hospital, this would probably go on for a year or two, when it would be widely known by all the people that they would be investigated when applying to the hospital for treatment, and it would be only a question of time when this would be broken up.

Dr. T. J. Dimitry: I may be permitted to mention that I served the Eye, Ear, Nose and Throat Hospital for a number of years, and I feel that they have been the formost institution in the South to carry out a plan to correct hospital abuse, and I refer you to the reports of that institution showing that a great number have been refused treatment, because they were really able to pay. They have been able to keep records there that have been admired throughout the country, for they are thorough in detail.

I would like to speak a little for the French Hospital, taking up Mr. Tipping's suggestion, and I might inform you that the scheme he suggests is carried on at the French Hospital. The French people and those who are born of French parents are entitled to care there. They are all assessed a certain nominal amount, monthly, and they receive the care not only of the physician of certain districts, but they receive the care of surgeons and specialists on skin, eye, ear, nose and throat. These people are not imposing upon our charitable institutions. They have seen fit to care for themselves.

I notice in the paper of one of the contributors that we send insurance liability cases, when they come to the Charity Hospital, to that physician who represents that particular insurance company. But it is not incumbent upon us to do so; the law does not designate that we should send it to that particular physician, we may send it to any physician. It is right for the patient to select whom he wishes, not one that the insurance company would want them to take. A man that desires a particular physician may be referred to that man, and is not compelled to go to any physician that has signed up with the insurnce company and the surgeons receiving a smaller compensation than is usually charged for such services. I do not think under any circumstances, it is proper for the Charity Hospital to charge a fee at any time, for any services rendered.

Dr. Sarah T. Mayo: There is one point I would like to make, to which Mr. Tipping has referred, and that is the need of the poorer class which does not quite come under the charity head, or those that cannot pay the private hospital fee. I would like to hear some discussion from this standpoint. We have tried recently the experiment of putting in small wards, or charging small fees to maintain the self-respect of those who could pay something, and I find that there is a large class of people who are willing to maintain their self-respect, and pay something, who do not belong in the Charity Hospital; I found that they can pay as high as $3.00 every week; of course, this does not maintain the patient, but they are able to pay something. Now, I believe that, as Mr. Tipping advises, the pay clinic would reach this class of people, the large self-respecting class who really do not want charity but who have no access to the pay hospital. I would like to hear this discussed, and agree with Dr. Weil in his effort to have a committee appointed by which there might be some co-operation among the different hospitals as to a

clearing house, as to finding out under what conditions the patients should be admitted to the Charity Hospital.

Dr. Daniel S. Brosnan: The abuse of the Charity Hospital, through "Compensation Cases," vitally affects me, as my work is practically confined to the care of the injured; and the upkeep of my hospital, which is fully equipped for this work, necessarily depends upon these cases. Whether an employer named in the Compensation Act is insured or not does not influence the liability of that employer. The law specifically fixes the liability for the first two weeks of invalidism at not more than $100 to cover hospital and surgical expense and places this obligation upon the employer. Therefore, the injured of the industries named in the act are not subjects for charity. Of course, the vast percntage of these industrial employers named in the act carry insurance, hence the greatest beneficiaries are the insurance companies that use the Charity Hospital and escape this initial expense. I can name several companies that instruct their risks to send their injured to the Charity Hospital and one company, in the last three or four months, has contributed $50.00 and $29.00 to the Charity Hospital. This is not fair to the profession nor to the Charity Hospital. Mr. Rightor stated that the insurance companies wished to pay for their cases; to my mind some of the companies do not wish to pay for this work. They certainly would have no trouble in paying for their cases if they sent them to pay institutions. All the companies are not this way; I handle thirteen of them. These thirteen companies are not in quest of charity and honorably pay for their injured. One of the preceding speakers said that the two weeks clause was a stumbling block. I have not found it so with these thirteen companies, because they realize that in some cases a longer hospital internment actually means an economy, through shortening the period during which the injured is upon half salary, and avoidance of permanent injury and death. The companies that are abusing the Charity Hospital regard their act as an evidence of keen business. Dr. Danna states that the abuse is perhaps under two per cent. I have, in one day, examined seven injured that should have been elsewhere, and these injuries had been inflicted during the preceding forty-eight hours. These seven beds could have been occupied by seven of the really indigent. The Charity Hospital, itself, attempts to gather in all material and detain it. It is unnecessary for me to state that I have never solicitated a case, but when, in response to a request from an employer or an insurance company, I attempt to move a patient, I meet with considerable difficulty. In May, I received telegraphic request from the Manufacturers' Liability Company to move an injured person to my hospital and trephine or do what was necessary. I called to see the man and told him his employer wished him moved to a pay institution, and he agreed to be moved. When my ambulance called for him, he refused to come. I then returned and after assuring him that he would not be coerced, in-

sisted that he tell me why he had changed his mind. He then stated that he had been advised to remain in the Charity Hospital, as the surgeon who was to operate him was more experienced than I, and the facilities there were greater than in my place. Now, I did not argue with this man, but I know that I see and handle more injuries than the surgeon in charge of this ward, and that my facilities for handling these cases cannot be improved upon. That evening I addressed a letter to Dr. Wilkins, Superintendent of Charity Hospital, giving full particulars, and asking Dr. Wilkins to assist me in having this man not remain a public charge. Dr. Wilkins wrote to me that he did not wish to establish a precedent, but would lay the matter before the board, Tuesday. The man was operated Monday and I have yet to hear further from Dr. Wilkins. The ensuing week, the man who operated filed application for my position with the insurance company. Regarding the excellent service the insurance companies receive in the Charity Hospital—this man was subjected to experiment; he had nine ounces of ether in petroleum introduced into his rectum in an unsuccessful effort to produce general anesthesia. Had this man died, the insurance company would have had to pay a death claim of about three thousand dollars. Last Sunday a man, whom I had attended for some injury, came to the city and found a friend in the Charity; this friend had a fractured lower maxilla. The man told his friend of my hospital and the number of injuries attended there, and the friend consented to be moved. Well, the Sister had to be seen, then the doctor had to be seen, and he wanted to know where the friend was going, and who was to treat him, etc. The doctor finally told this man that since the friend was to remain in a hospital, that it would be better for him to remain in the Charity Hospital. This was an unfair effort to detain a case that did not need charity. Some time ago, an injured man was placed in the Charity ambulance and the doctors instructed to deliver him to my place. This man had a fractured leg. One of my nurses responded to the door bell, and found this man seated upon the sidewalk propped against the building. The Charity ambulance was gone, they had simply dumped him out and left him. I crave your indulgence for this digression, but this helps to demonstrate some of the difficulties experienced by me. Now, I was shown this discourtesy because the case was not allowed to be taken to the Charity Hospital. **The Charity Hospital should not be a competitor.** This quest of material should cease and when a person requests some other destination than the Charity, careful handling and civility should be granted. The intern should realize that he has not lost a case, but has effected an economy for the Charity. So we know now that the Charity Hospital, besides being imposed upon, increases its burden through quest of material and detention of cases. This increased burden denies accommodation to the really indigent. Then, too, this is a great loss to the profession. I can mention many cases similar to those I have mentioned. As further

demonstration of quest of material upon the part of the Charity Hospital, I wish to call attention to the telephonic call of "Ambulance." This should be omitted from the telephone directory, and the proper number substituted. I was pleased to hear Mr. Lake express himself as wishing to have the Charity Hospital remain an institution for the dispensation of charity, the charitable care of the indigent. Legislation making the abuse of the Charity a punishable offense is necessary. **But sensible regulation within the Charity will accomplish wonders!** Furnish the ambulance doctors printed lists of industries covered by the Compensation Act, and when the Charity ambulance responds to a call from such an industry, have the doctors grant emergency care—stop hemorrhage, immobilize, relieve pain, and place protective dressing, and then instruct the employer or the injured that the injured cannot be taken to the Charity Hospital, but can be taken anywhere else suggested; and make no suggestions themselves. These cases should not be taken to the amphitheater and trephined, amputated, etc. This is not emergency care and only increases the burden of the Charity and deprives the profession. Leave this trephining, amputation, suturing, etc., for the profession. There is no case that will be injured by proper emergency care. I receive patients from Louisiana and Mississippi that have been given only emergency care and my death rate is lower than the other institutions. If my suggestions are followed, the improvement sought will be obtained, and the Charity Hospital will be a place for the charitable care of the poor **and its generous State appropriation will prove more than adequate.** Haphazard contributions by insurance companies which send their work there should be discountenanced and the profession, through its humanity, should not be allowed to embarrass itself by the Charity Hospital accepting these donations. These doctors give valuable time and should not be allowed to expend it upon cases wherein the law places a liability, but should be able, without actually denying themselves and associates, to give this time to the indigent. To recapitulate, my suggestions for the elimination of the abuse of the Charity Hospital by compensation cases are:

Legislation making the abuse a punishable offense; elimination of the telephonic call "Ambulance" from the telephone directory; printed lists of industries covered by the act to be given to the ambulance attendants, with instructions for them to grant only emergency care in those cases covered, and then transport the case, where instructed (but not to the Charity), and to make no suggestions in selection of place. If no place is suggested, take him to his home; discontinuance, upon the part of the Charity itself, of its quest of material and discontinuance of its efforts to detain and its actual detention of cases that are covered by the act. Gentlemen, I thank you.

Dr. A. L. Levin: I should like to ask if there is any hospital

where there is any provision made for injured employees of the colored race? I had a letter from one of the concerns I represent not to send any injured employee to the Charity Hospital, that they are willing to pay for them. During the storm I had a colored patient who was seriously injured and for eighteen hours I had to care for him in my office. Then I sent for a private ambulance and tried to get a place for him in the I. C. Hospital, but they refused, claiming that that hospital was only for railroad employees. There was no other place to send him but to the Charity Hospital. I conferred with the firm in Chicago, and they instructed me to pay for that man. Now, if the Charity Hospital will accept payment for that man, he was there sixteen or seventeen days, they can get a check right now from that firm. I am asking that question because such cases might occur in the future. I am representing four factories on the other side of the river, and the injured employees of the colored race have no other place for me to send them but to the Charity Hospital.

Mr. Lake: The Charity Hospital does not render any bills, but the Charity Hospital is always willing to accept donations.

Dr. W. D. Phillips: In answer to Dr. Levin's question, I should like to state that the Sarah Goodridge Hospital is undergoing repairs gradually, and on the first of January they are going to open up that institution, as an up-to-date place. After that time any colored patients will be easily cared for.

Dr. F. R. Gomila: I had an experience which I think will interest you, because it relates to a very large concern here in the city—the New Orleans Railway and Light Company. This night, three weeks ago, two of their men were overcome by fumes of gas about six o'clock in the evening. One of them was a white man, the other fellow seemed to be a Mexican, or a light-skinned negro. I was phoned to come over to see what assistance I could render. I was there for about a half hour. Meantime the ambulance was phoned for. The injured men had to receive some attention meanwhile, which I proceeded to give. Afterward I wrote the company a letter, and sent them a bill. Here is the reply:

"Dear Doctor—Replying to your communication of the 3rd inst., beg to advise that this company has its own corps of physicians, who are at the disposal, free of charge, of any of our employees who are injured. If a physician is called other than those in the regular employ of the company, we do not pay any doctor bills. In cases of emergency, our instructions are to send the man to one of the hospitals immediately in an ambulance for treatment."

This is from the New Orleans Railway & Light Company. Now, I showed this letter to Mr. R—, and he said that some of the employees of the company do not come under the act. These men were plumbers, I presume, because they were putting in a pipe, and I know that this particular type of men comes under that rule, but this letter gives you an idea of one of the largest corporations here

just trying to dodge the issue. These men went to the Charity Hospital in the ambulance, after they had received my treatment.

Dr. Adolph Henriques: I think we owe a vote of thanks to the Committee on Hospital Abuse, the Chairman of which is Dr. Phillips, for their activity in bringing this matter to a head. It is apparent, from the discussion which has gone on here to-night, that hospital abuse does exist, and from what we can gather from the superintendents of some of the other institutions, that hospital abuse exists in the Charity Hospital only. Judging from what Mr. Lake has said to-night, I believe that we have a rather simple solution of the matter. It is apparent that the members of the Board of Administrators of the Charity Hospital are in accord with Mr. Lake's views, and I believe that, with a small committee appointed to confer with that board, it would be a very simple thing for the Board of Administrators to remedy the situation.

Dr. B. A. Ledbetter: Upon one point which Dr. Danna brought out, I think, special stress should be laid, and that is the matter of education. Lots of people go to the Hospital ignorant, and I believe that education will do more to correct this evil than any one thing that we can possibly do. Another point brought out by Mr. Lake: I believe he hit the nail square on the head. The greatest evil is in taking people from the different insurance companies, and Mr. Lake expressed an opinion to-night that he thought these people should not be sent there at all, that he was opposed to the Charity Hospital charging any one for services rendered. I think if we eliminate the insurance companies, the accident insurance companies, if we eliminate these people from going there, I think it will correct practically ninety per cent of the evils that exist in that hospital to-day. As far as I am concerned individually, I believe that the great point is education, as Dr. Danna brought out to-night.

Dr. L. M. Provosty: Dr. Brosnan has made us laugh about the difficulty he experienced in getting one of his patients out of the Charity Hospital.

While he does not need my testimony, I had an experience which would go to prove that what he says is true. An epidemic of diphtheria occurred a short while ago in an asylum of which I had charge. Owing to the high price of antitoxin the sisters were unable to procure the necessary amount required by our charges. I then suggested that they apply to the Municipal Fund at the Eye, Ear, Nose and Throat Hospital. They were told that the supply was exhausted. I then told them that they might probably get the antitoxin at the Charity Hospital. The authorities of the Hospital informed them that they could not give antitoxin free but would take charge of the patients. The sisters suggested that it would be less expensive to the Hospital to furnish the antitoxin than to take entire charge of the patients. The reply was: "Bring them here, we want the credit for taking care of the children." This would

indicate that the Hospital is a little bit grasping and tries to get all the patients that it can. In justice to the Hospial, I wish to add that they were kind enough later on to supply us with antitoxin at reduced rates.

Dr. E. W. Mahler: I think this meeting will do a great deal of good to crystalize public opinion, not only against abuse in accident cases under the Workmen's Compensation Law, but abuses of every kind. I think the matter can be solved without the Medical Society appearing in a selfish light. The Hospital is attempting to encourage a Social Service. I have talked to Mr. Pace and it strikes me that they should have a list of all deserving people in New Orleans, that a list of this kind might be collected. If a man applies for treatment, all you have to do is to ask him his name and look him up. If he is on the list, no further questions are necessary. If he is not on the list, you investigate him. After a time, there will not be more than three or four or five a day to be investigated, and I believe, outside of that, with the assistance of the Board of Administrators, the medical profession and the general public, who want to see the Hospital do the most good for the greatest number of people, poor people, that an act can be passed by the Louisiana Legislature, at its next session, the same as they have in New York, making it a misdemeanor, punishable by fine, for anybody to impose on the hospital, the money derived from these fines to go towards the support of the Social Service of the Hospital. I think if we could get the public aroused to the question, that that could be very readily done, and the problem can be solved without the medical profession appearing that they are trying to get more patients for themselves.

Dr. Jamison: All I want to say now, Mr. President, is that during the time I hung around the Charity Hospital, it has been some time now, I have never seen patients resisting being taken away from the Charity Hospital, and I have never seen doctors or interns or visiting men, or anybody else around the Hospital, either under the old regime or new, resisting any patient's leaving. On the contrary, we have always wanted to get our beds ready for new patients to come in. We are only too glad to have them come there, or take them to any other place to be taken care of. I have never seen anybody resisting being taken away from the Charity Hospital.

Dr. Dempsey: I would like to add in connection with the expenses that these patients usually have, the doctor did not include the coop of chickens that these fellows send to the physician after their return home.

The Chairman: If there is no further general discussion, I will ask the gentlemen who have taken part in this Symposium to close the discussion.

Dr. Danna (in closing): I was very glad to hear the pay clinic brought out by Mr. Tipping, and I think the idea ought to be crystallized into something tangible. I think it will do a great deal of

good, and will help a great deal to eliminate some of the evils. Of course, I took up the subject from a general viewpoint. I did not bring out the facts on the Employers' Liability Act. There are a number of hospitals in the city that take care of colored patients. The I. C. Hospital has been mentioned, also the Sarah Goodridge Hospital, and there is also one on Howard street. I had the pleasure of doing a surgical operation some time ago on a great big negro from the country, and I could not get him out there. I do not think I would go back there, but I want to say that they will be glad to take care of your patients, I think. The Railway Company is the biggest sinner against the charity of the Hospital. There is hardly a day that somebody is not hurt, and sometimes it runs into ten and fifteen people who are hurt on street cars. Where the Railway Company knows it is going to have a damage suit where it finally winds up with some kind of a compromise, and it is no damage suit, the Railway Company feels responsible to the extent of sending their surgeon to see that patient, and they keep posted about him, and they continue to get information about him all the time. If the Railway Company had to take care of the accident cases that come there, hurt by the Railway Company, and in which they are interested, because they cannot deny it, they would have to have a good sized hospital of their own. I want to say that from my own particular knowledge and experience, although the Illinois Central Railroad Company has a hospital of its own, that the Railway Company used to get four or five times as many patients—that is, that we used to take care of four or five times as many patients that came to us as a result of injuries, as compared with the cases from the I. C. Railroad Company. Of course, as regards the firemen and police force, it is a question as to whether their being doctored in the Hospital is right or not. The city of New Orleans feels that being a city institution, and one-third or more of the taxes of the State of Louisiana being paid by the city of New Orleans, that the city is entitled to such special consideration; that is an entirely separate matter.

Now, about the doctors who get paid for bringing these country patients down here. I have repeatedly seen patients admitted to the hospital who were treated for nothing, and said that they could not afford to pay anything, because they had paid the doctor who had brought them down $100 or $150 for taking them to the front gate of the hospital, from there to the ward, assisting the doctor in coming to a conclusion as to what was the matter with the patient, and then saying "Good-bye, my dear patient." Of course, the doctor was entitled to something, but not that much for doing that, because he need only have written a note and say: "Just present it at the front gate, and you will get the same consideration." I want to tell you that there are some such doctors in this vicinity. There is one man close to the border of Mississippi who used to come down regularly, making a trip every two or three weeks, and he would

make enough to give him a good living. I believe he made more money at that than he did at the actual practice of medicine.

Now, about rendering bills, I would like to say for Mr. Lake's enlightenment, if he does not know it already, about the matter of rendering bills; I did not say to charge the patient just for what you are doing for him. I believe it would be a mistake to put the hospital on that basis. But rendering bills for services rendered patients is the same that has been done by the Charity Hospital for years. There are certain lines of steamships coming to this city regularly, at least they used to up to two years ago, which would get bills for the treatment of their sailors in the Charity Hospital. They paid a dollar a day, no matter how long the patient stayed there. A certain doctor used to have a number of them; he could tell by the name that they belonged to those companies, and we used to get a little revenue, so that is nothing new. Besides that, the Charity Hospital has for years charged patients outside of the State of Louisiana for treatment. You do not hesitate to charge them for serum or salvarsan if they can pay. So it is not anything new to be sending bills for the treatment of patients and to be actually charging patients for what you are doing for them.

Regarding this Workmen's Compensation Act, I do not say "Turn the man down when it comes down to that." I think we ought to give him the first aid, and send him to the surgical ward, but I also think that we ought, in some way, to let the public know that we discourage the admission of a patient of that kind in the Charity Hospital by such methods as this meeting. It ought to be known that the Charity Hospital discourages the admission of patients for whom a provision is made for the payment of physician and for hospital fees. After they have gotten the treatment, I think it is nothing but fair that the insurance company, which has received a premium that has already been paid for the purpose, and for which they have promised to pay the doctor bill and hospital bill, for them to receive a bill for services rendered to these people. That is not charging the patient. I believe there is no harm in that whatever, and I think the amount ought to be exactly what the amount would be in a private hospital, so we would not have competition, because it is unfair when the Charity Hospital does that work for less than the Touro Infirmary, or the Hotel Dieu, or any other hospital would do it for, and as Dr. Brosnan says, those people know that the men in the hospital who do that work are the best men in town, so they ought to be charged at least as much as the man is charged on the outside. What would happen then? The Liability Companies would know it would cost them just as much as anywhere else, and gradually, these people would send these individuals elsewhere than to the Charity Hospital, and in that way the thing would take care of itself. Now, once more, in conclusion, I want to lay stress on the fact that nothing has ever been accomplished where a large number of individuals in a com-

munity are concerned, except by the education of the people, by the education of the public, and the moment you educate the public to a knowledge that the thing is wrong, and the man knows when he does it that the people at large know he is doing wrong, why then, we will have reached the point where the evil is going to be corrected.

Dr. Muir Bradburn (in closing): I wish to repeat that investigation by the Hospital of these "Compensation Cases" that apply there for treatment is necessary in order to solve the problem. The employer in these injury cases should be consulted as to provision he has made for the care of his injured workmen. In case of emergency the patient has to be taken somewhere. The law provides for institutional treatment. Let him be taken therefore to that institution which his employer or the employer's insurance company has selected. In investigating this subject I also have found that a great many of the railway company's cases are being treated at the Charity Hospital.

Dr. Knolle: The question of education is paramount in what we are going to endeavor to accomplish. Education will have to begin, gentlemen, with our own endeavors. There is no other way in which the public can be so thoroughly, so readily, and so conspicuously educated as through the doctors. They should endeavor as a whole to enlighten the public about what the abuse to the hospital means and what the remedy is, and that remedy will be, as I remarked previously, that people can be properly taken care of, and at a price within their means. It is going to eliminate that first thing the outside man fears. The remarks made in reference to the country doctor I want to most thoroughly substantiate, because it is a most frequent occurrence to meet the country doctor down here, who has come for that purpose alone, and I shall promise you that it will be an endeavor on my part to take up this matter before the meeting of the Louisiana State Medical Society, and by that means try to disseminate it throughout the entire state, and get the co-operation of the doctors. I shall cite the worst case bearing on this subject that I know of. Only two or three weeks ago a lady came to New Orleans intending to go to the best doctor and to the best institution. She was advised that the best doctors did work at the Charity Hospital. She consequenly went to the Hospital. She was operated on, and got well, and when she was ready to leave the Hospital she pulled out a nice bank roll of $500 that she had expected to expend for the services she got at the Charity Hospital free. She did not give that $500 to the Hospital, nor to anybody else in New Orleans. She tarried just long enough to take the railroad train and go back home, and she was sent to the Charity Hospital by people right here in the city who advised her. Therefore, the education of our own people first, and then the people throughout the State, is going to be the means of accomplishing the greater part of our undertaking.

N. O. Medical and Surgical Journal

Editorial Department.

CHAS. CHASSAIGNAC, M. D. ISADORE DYER, M. D.

TWENTY YEARS.

With the present number the JOURNAL completes its twentieth year under the same editorial management, a record not surpassed by many medical publications.

The editors will not indulge in any degree of retrospection, mainly because this has been said to be a sign of arteriosclerosis or, at least, of advancing age. Yet it would be unnatural not to make some reference to some of the changes which have taken place in the matters that concern most nearly the medical profession and ourselves.

The times have changed and men with them and medical men and medical times have been no exception. There has

been a good deal of progress and we would like to be able to say that it has all been improvement as well, but as with other things earthly all medical changes have not necessarily been a gain.

If, omitting exceptions and details, we were asked to express broadly what we considered the most marked differences between the medical men of now and twenty years ago, we would state the following general propositions:

Looking first on the bad side, it appears that the younger men are less eager to work for work's sake alone, less amenable to discipline, less willing to do their full duty as subordinates, not satisfied to await reasonably for the time to arrive when they can properly assume leadership; while the older men are less inclined to be sympathetically helpful of their young brethren, less considerate of the beginners, mingle less with them and do not perform their own share of work in the medical societies. The differences noted in the two sets no doubt are interdependent, they bear the relationship of cause and effect, but which is which is not for us to say; let our readers ponder upon the fact and reach their own conclusions.

Viewing the good side, fortunately the contrast is greater. Medical education, training, and practice, all are on a more exact, more truly scientific basis; more interest has developed in preventive medicine and more advantage is being taken of the wealth of clinical material offered by our numerous and better managed hospitals.

We trust that the Journal has in the main accomplished its mission during the score of years just passed and has contributed its mite towards the sum of *improvement* which can be deducted from all the *progress* which has developed. We believe we have improved somewhat also, but on this point others must decide. We have prospered, we are still here and hope that this is an evidence of the survival of the fit, if not of the fittest.

We hope to continue for a little time yet and mean to improve all we can. Grateful for all the encouragement, the assistance, the kindness we have received from colleagues and confreres, young and old, we say "God bless everybody!"

THE BOARD OF HEALTH.

The activities of the Louisiana State Board of Health seem to increase every day and new fields continue to develop under the industriousness of the present officials. The Almanac and Quarterly Bulletin, recently issued, are evidences of this.

The Bulletin carries a number of interesting data, while the Almanac compels notice of domestic health obligation by the numerous aphoristic suggestions set among the calendar events.

The health department announces the early inauguration of a laboratory car for field work and also the establishment of a bacteriological laboratory entirely under State Board administration. It is further planned to establish branch laboratories, at such time as these may be demanded.

A pellagra survey is reported, showing a total of 970 official cases in Louisiana, from May 1 to November 23, 1915, with 220 deaths from the disease. The number of cases estimated for the state would be 3,921 for this period; the largest number of cases was found in Caddo parish, in North Louisiana. Already some intensive work with pellagra has been done at Bogalusa, under the auspices of a local business concern, having a large number of employees.

From typhoid, 244 deaths were reported from January 1 to November 1, 1915; 63 of these were in Orleans Parish.

The broad purposes of the health office are particularly exampled by the publication in hte Bulletin of a circular issued by the Oregon Board of Health and dealing with venereal diseases. Plain facts are printed and in terms not hard to understand. The circular has no preaching, but an emphatic statement of causes and effects. In this number of the Bulletin the Board prints all of the late revisions and amendments to the Sanitary Code.

The work of the Louisiana State Board of Health is commendable and it should be remarked that it is thoroughly up to date and keeping pace with other progressive states. The efficiency of the Board must depend upon the support and co-operation of the medical profession and no higher

expression of confidence could be shown than by a united effort to make vital statistics in Louisiana a matter of attention and practise.

Society Proceedings

THE TRI-STATE MEDICAL SOCIETY OF ARKANSAS, LOUISIANA AND TEXAS.

Convening in the Elks' Club rooms, Marshall, Texas, December 14, 1915, at 9:30 a. m., for the Twelfth Annual Session, with President W. G. Hartt, of Marshall, Texas, in the chair, the following program was immediately inaugurated:

"Invocation," by Rev. Dr. C. S. Sargent, Marshall, Texas, pastor of Episcopal Church.

"Words of Welcome," by P. O. Beard, a prominent attorney of Marshall, in which the members of the Society were thanked for having selected Marshall as their annual meeting place, and assured of a most hearty welcome.

"Response," by Dr. E. H. Martin, Hot Springs, Ark., in words befitting the occasion, on behalf of hte Society.

After the preliminary program, the scientific program was begun under the

Section of Pediatrics and Obstetrics.

Dr. J. F. Rosborough, Marshall, Tex., Chairman.

"Recurrent Vomiting in Children," Dr. M. S. Picard, Shreveport, La.

Paper discussed by Drs. O. W. Cosby, Monroe, La.; E. H. Martin, Hot Springs, Ark.; T. E. Wright, Monroe, La.; J. O. McReynolds, Dallas, Tex.

"Treatment of Puerperal Septicemia," Dr. J. F. Rosborough, Marshall, Tex.

Paper discussed by Drs. J. N. White, Texarkana, Tex.; Chas. Gregory, Greenville, Tex.; Parish, Fort Worth, Tex.; T. E. Wright, Monroe, La.; C. R. Hargrove, Marshall, Tex.; C. C. Sims, Mooringsport, La.

Section on Electro-Therapy.

Dr. S. C. Barrow, Shreveport, La., Chairman.

"The Diagnosis of Early Pulmonary Tuberculosis by Means of the X-Ray," Dr. S. C. Barrow, Shreveport, La.

Paper discussed by Drs. M. S. Picard, Shreveport, La.; J. M. Bodenheimer, Shreveport, La.; C. C. Sims, Mooringsport, La.

AFTERNOON SESSION.

Section on Eye, Ear, Nose and Throat.

Dr. R. H. T. Mann, Texarkana, Ark., Chairman.

"Surgery of the Tonsils," Dr. R. H. T. Mann, Texarkana, Ark.

Discussed by Dr. T. D. Boaz, Shreveport, La.

"Some Important Considerations in Tonsil Surgery," Dr. John McReynolds, Dallas, Tex.

Discussed by Drs. J. L. Scales, Shreveport, La.; W. G. Hartt, Marshall, Tex.

"Suppuration of the Middle Ear in Children, With Report of Cases," Dr. T. D. Boaz, Shreveport, La.

Discussed by Drs. John McReynolds, Dallas, Tex.; J. T. Halsey, New Orleans, La.

"Some Observations Concerning Vincent's Angina," Dr. J. L. Scales, Shreveport, La.

Discussed by Dr. E. H. Martin, Hot Springs, Ark.

Section of Genito-Urinary Diseases.

Dr. S. Y. Alexander, Shreveport, La., Chairman.

"Syphilis," Dr. S. Y. Alexander, Shreveport, La.

Discussed by Drs. E. H. Martin, Hot Springs, Ark.; O. W. Cosby, Monroe, La.; S. Logan, New Orleans, La.

"Acute Infection of the kidneys," Drs. Hume and Logan, New Orleans, La.

Discussed by Drs. S. Y. Alexander, Shreveport, La.; J. T. Halsey, New Orleans, La.; H. J. Parsons, Mansfield, La.; C. M. Tucker, Haughton, La.

"Treatment of Gonorrhea in Women," Dr. E. H. Martin, Hot Springs, Ark.

Discussed by Drs. J. M. Bodenheimer, Shreveport, La.; T. J. Allison, Gladewater, Tex.; S. Logan, New Orleans, La.; O. W. Cosby, Monroe, La.; J. T. Halsey, New Orleans, La.

EVENING SESSION.

"President's Address," Dr. W. G. Hartt, Marshall, Tex.

"Heredity and Its Relation to Insanity," Dr. Chas. L. Gregory, Greenville, Tex.

WEDNESDAY, DECEMBER 15, 1915.

Section on Medicine.

D. C. Hargrove, Marshall, Tex., Chairman.

"Medical Treatment of Gastric and Duodenal Ulcers," Dr. J. E. Knighton, Shreveport, La.

Discussed by Drs. C. C. Sims, Mooringsport, La.; Preston Hunt, Texarkana, Ark.

"A Plea for the Early Diagnosis of Pellagra," Dr. C. R. Hargrove, Marshall, Tex.

"The Alkaline Treatment of Pellagra," Dr. W. W. Nelson, Marshall, Tex.

Discussed by Drs. C. C. Parish, Fort Worth, Tex.; E. H. Martin, Hot Springs, Ark.; C. M. Tucker, Haughton, La.; T. J. Allison, Gladewater, Tex.; T. E. Wright, Monroe, La.

"Pulmonary Autogenous Vaccins," Dr. J. C. Terrell, Fort Worth, Tex.

Discussed by Drs. C. C. Parish, Fort Worth, Tex.; Dr. Nettie Klein, Texarkana, Ark.

"The Intravenous Use of Quinin in Malaria," Dr. Thos. E. Wright, Monroe, La.

Discussed by Drs. J. M. Bodenheimer, Shreveport, La.; O. W. Cosby, Monroe, La.; C. M. Tucker, Haughton, La.; E. H. Martin, Hot Springs, Ark.

"The Direct Study of Fresh Bile Removed by Means of the Duodenal Tube in the Diagnosis of Hepatic Diseases," Dr. H. L. McNeil, Galveston, Tex.

Discussed by Dr. J. T. Halsey, New Orleans, La., and Dr. Hunt.

Section on Surgery.

Dr. Preston Hunt, Texarkana, Ark., Chairman.

"Cesarian Section Under Local Anesthesia, With Report of Case," Dr. Roger Cocke, Marshall, Tex.

Discussed by Drs. E. L. Beck, Texarkana, Ark.; J. A. Moseley, Jefferson, Tex.

"Allen Treatment in Surgical Diabetes," Dr. John T. Halsey, New Orleans, La.

Discussed by Drs. J. E. Knighton, Shreveport, La.; W. S. Logan, New Orleans, La.

"Operative Measures in Chronic Monarticular Affections of Adults," Dr. W. C. Campbell, Memphis, Tenn.

"Acute Infections Osteomyelitis," Dr. S. A. Collom, Texarkana, Tex.

"A Simple Method of Closing Vesico-Vaginal Fistula," Dr. T. F. Whiteside, Timpson, Tex.

Discussed by Drs. J. M. Bodenheimer, Shreveport, La.; S. A. Collom, Texarkana, Ark.

Business Meeting.

In accordance with the time-honored procedure, the business meeting of the Society was held immediately after lunch of the second day. The minutes of previous session were read and approved. The President and Secretary both gave a verbal report, which were approved by the Society, after which Dr. R. H. T. Mann, Chairman of Councilors, introduced the following new members to the Society:

Drs. M. M. Bannerman, Grand Cane, La.; F. E. Baker, Stamps, Ark.; T. R. Bassett, Harleton, Tex.; G. E. Cannon, Hope, Ark.; G. S. Carter, Beckville, Tex.; J. P. Chambers, Jefferson, Tex.; O. W. Cosby, Monroe, La.; J. B. Crain, Kilgore, Tex.; G. L. Eads, Marshall, Tex.; A. D. Hatcher, Flournoy, La.; W. W. Halbert, Hughes Springs, Tex.; T. A. Hightower, Hot Springs, Ark.; H. W. Jarrell, Mansfield, La.; S. Logan, New Orleans, La.; D. D. Mahon, Marshall, Tex.; J. Montgomery, Garden Valley, Tex.; H. L. McNeil, Galveston, Tex.; C. McCasland, Lassater, Tex.; J. N. McCasland, Lassater, Tex.; H. J. Parsons, Mansfield, La.; C. C. Parish, Fort Worth, Tex.; D. P. Rians, Marshall, Tex.; C. C. Sims, Mooringsport, La.; M. S. Sims, Mooringsport, La.; T C. Terrell, Fort Worth, Tex.; J. H. Weaver, Hope, Ark.; M. H. Wheat, Marshall, Tex.; T. E. Wirght, Monroe, La.

The Secretary reported that the Auditing Committee had approved the books of Secretary-Treasurer.

The following were awarded gold medals for the best three papers on original research work presented to the Society: First

prize, Dr. T. E. Wright, Monroe, La.; second prize, Dr. H. L. McNeil, Galveston, Tex.; third prize, Dr. T. C. Terrell, Fort Worth, Tex.

It was moved and duly seconded that medals be offered next year for the best papers. Dr. Mann agreed to donate the second medal and Dr. Sims the third, providing Dr. Dowling did not renew his offer.

Upon invitation of Dr. Mann, Texarkana was decided upon as the next meeting place, in December, 1916.

Upon motion, duly seconded, the thanks of the Society were extended to the press, the ladies, the Elks' Club and the Marshall people in general for the courteous treatment extended the Society throughout the meeting.

The following officers were then elected unanimously: President—Dr. J. E. Knighton, Shreveport, La. Vice-Presidents—For Arkansas, Dr. J. H. Weaver, Hope, Ark.; for Louisiana, Dr. C. M. Tucker, Haughton, La.; for Texas, Dr. C. R. Hargrove, Marshall, Tex. Secretary—Dr. J. M. Bodenheimer, Shreveport, La. (re-elected). Councilors—For Arkansas, R. H. T. Mann, Texarkana, vice R. H. T. Mann, term expired; for Louisiana, J. L. Scales, Shreveport, vice T. P. Lloyd, term expired; J. G. Yearwood, Caspiana, vice C. M. Tucker, elected Vice-President; for Texas, S. A. Collom, Texarkana, vice D. M. Taylor, term expired.

The Secretary was instructed to write to Dr. C. A. Smith, Texarkana, expressing the sympathy of the Society on account of his illness and hoping for a speedy recovery.

(Signed) J. M. Bodenheimer, *Secretary.*

Medical News Items

Orleans Parish Medical Society Notes.

officers and committees for 1916.

Board of Directors—Dr. W. H. Knolle, President; Dr. J. P. O'Kelley, First Vice-President; Dr. E. W. Mahler, Second Vice-President; Dr. M. Thomas Lanaux, Third Vice-President; Dr. Charles A. Bahn, Secretary; Dr. Carl A. Weiss, Treasurer; Dr. Maurice J. Gelpi, Librarian; Drs. Frank J. Chalaron, Allan Eustis and Paul T. Talbot, additional members of Board of Direc-

tors; Mr. George Augustin, Assistant Secretary-Librarian.

Delegates to Louisiana State Medical Society—Drs. Isidore Cohn, J. A. Henderson, S. Chaille Jamison, M. Thomas Lanaux, E. L. Leckert, W. A. Love (1916 meeting); Drs. George S. Bel, J. George Dempsey, Wallace J. Durel, Paul J. Gelpi, W. D. Phillips, Charles V. Unsworth, George H. Upton (1916 and 1917 meetings).

COMMITTEES.

Scientific Essays—Dr. H. W. Kostmayer, Chairman; Dr. R. E Stone, Vice-Chairman; Drs. J. A. Lanford, John F. Dicks, W. T. Patton, P. Jorda Kahle, H. W. E. Walther.

Membership Committee—Drs. Randolph Lyons, Lucien A. Fortier, H. W. E. Walther, J. Browne Larose. (Three additional members to be elected by Society.)

Judiciary Committee—Dr. Charles V. Unsworth, Chairman; Dr. A. C. King, Vice-Chairman; Drs. F. R. Gomila, J. T. Crebbin, John F. Oechsner.

Public Health—Dr. W. T. O'Reilly, Chairman; Dr. W. H. Robin, Vice-Chairman; Drs. Isaac Ivan Lemann, Philips J. Carter, C. A. Wallbillich, P. B. Salatich.

State Medicine and Legislation—Dr. William H. Seemann, Chairman; Dr. George S. Bel, Vice-Chairman; Drs. B. A. Ledbetter, John Callan, L. R. De Buys, Homer Dupuy, E. L. Leckert, W. W. Leake, Charles F. Gelbke, E. W. Mahler, S. W. Stafford.

Condolence—Dr. Charles N. Chavigny, Chairman; Dr. Louis Levy, Vice-Chairman; Drs. J. M. Koelle, J. Frank Points, George F. Roeling, Sidney F. Braud.

Library—Dr. Maurice J. Gelpi, Ex-Officio Chairman; Dr. Homer Dupuy, Chairman; Dr. S. P. Delaup, Vice-Chairman; Drs. Howard D. King, R. M. Van Wart, A. E. Fossier.

House—Dr. J. George Dempsey, Chairman; Dr. Alfred A. Pray, Vice-Chairman; Drs. W. G. Troescher, W. A. Gillespie, E. C. Samuel, M. J. de Mahy.

Publication—Dr. C. A. Bahn, Ex-Officio Chairman; Dr. Charles Chassaignac, Chairman; Dr. Isadore Dyer, Vice-Chairman; Drs. Philip Asher, A. Nelken, W. T. Richards, A. Granger.

Auditing—Dr. George H. Upton, Chairman; Dr. E. L. King, Vice-Chairman; Drs. Arthur I. Weil, J. M. Hountha, Solon G. Wilson, L. DePoorter.

President's Report—Dr. J. E. Landry, Chairman; Dr. Charles J. Bloom, Vice-Chairman; Drs. T. R. Burt, J. B. Elliott, Jr., C. C. Bass, Ramon A. Oriol, J. Brown Larose.

Secretary's Report—Dr. E. D. Friedrichs, Chairman; Dr. L. L. Cazenavette, Vice-Chairman; Drs. J. G. Stulb, Emile Bloch, Carolyn Mims, David Adiger.

Treasurer's Report—Dr. M. Couret, Chairman; Dr. John T. O'Ferrall, Vice-Chairman; Drs. D. P. West, Gally Wogan, H. B Seebold, Adolph Jacobs.

Librarian's Report—Dr. V. C. Smith, Chairman; Dr. J. E. Brierre, Vice-Chairman; Drs. George Taquino, Monroe Wolf, C. Grenes Cole, H. J. Lindner.

Hospital Abuse—Dr. W. D. Phillips, Chairman; Dr. J. A. Danna, Vice-Chairman; Drs. Rupert M. Blakely, Leonard C. Chamberlain, D. L. Watson, Adolph Henriques, H. E. Bernadas. Sara T. Mayo, Lucian H. Landry, Daniel S. Brosnan.

Delgado Memorial—Dr. Hermann B. Gessner, Chairman; Dr. Rudolph Matas Vice-Chairman; Drs. F. W. Parham, William Kohlmann, Felix Larue.

Credit Committee—Dr. William H. Block, Chairman; Dr. D. Fred Waide, Vice-Chairman; Drs. George H. Upton, George F. Cocker, H. E. Nelson.

American Society of Tropical Medicine Meeting.—The thirteenth annual meeting of the American Society of Tropical Medicine will be held in Washington, D. C., May 9-11, inclusive, 1916, in affiliation with the Triennial Congress of American Physicians and Surgeons. It is important that those who desire to contribute a paper to this meeting should send the title to the Secretary, Dr. John M. Swan, 457 Park Avenue, Rochester, N. Y., at the earliest possible moment.

Meeting of Southwestern Physicians.—The annual meeting of the Southwestern Medical and Surgical Association was held in El Paso, N. M., December 11, 1915. Dr. Abraham G. Shortle, Albuquerque, N. M., was elected president, and Drs. William W. Watkins, Phœnix, Ariz., and Robert E. McBride, Las Cruces, N. M., were elected vice-presidents.

Canal Zone Medical Society Meeting.—The Medical Association of the Isthmian Canal Zone met December 16 and elected the following officers: Dr. Lewis B. Bates, president; Dr. Her-

bet C. Clark, vice-president; Dr. Frazer F. Monroe, secretary-treasurer, all of Monroe. The next meeting will be held in Ancon, December 16, 1916.

Meeting of Northern Pacific Surgeons.—The following officers were elected at the annual meeting of the Northern Pacific Surgical Association, held in Spokane, December 17: President, Dr. James R. Yocom, Tacoma; vice-presidents, Drs. George S. Gordan, Vancouver, B. C., and G. L. Whiteside, Victoria, B. C.; secretary-treasurer, Dr. Edward A. Rich, Tacoma. The next meeting will be held in Tacoma.

Meeting of Southern Surgeons.—The annual meeting of the Southern Surgical and Gynecological Association was held at Hotel Gibson, Cincinnati, Ohio, December 14 and 15. Dr. Thomas O. Cullen, Baltimore, was elected president, and Drs. Robert S. Hill, Montgomery, Ala., and Willard Bartlett, St. Louis, were made vice-presidents. White Sulphur Springs, Va., was selected as the next meeting place.

The American Society for the Study of Alcohol and Other Narcotics held its forty-ninth annual meeting in Washington, December 15, and elected the following officers: President, Dr. DeLancy Carter, New York City; vice-president, Col. L. Mervin Maus, U. S. Army (retired), Frankfort, Ky.; corresponding secretary-treasurer and editor of the journal, Dr. Thos. D. Cruthers, Hartford, Conn., and recording secretary, Dr. Alfred Gordon, Philadelphia.

Eugenic News.—A new publication of the Eugenics Record Office at Cold Spring Harbor, New York, is the *Eugenic News*. The first number, which recently appeared, is a four-page sheet and contains an editorial on the purpose of the new publication and news concerning the doings of the Eugenics Record Office, field workers, and general news of the eugenics movement. By having a medium of communication between the various eugenic organizations and workers, it is hoped that much duplication of effort may be avoided and the whole movement promoted.

Change in Public Health Hospitals.—According to announcement, a plan will be submitted by President Wilson to Congress for a new system of public health hospitals to take the place of the present condition of contract care of patients and government hospital service. It is proposed, as a first step, to take over the meteorological research station at Blue Ridge,

Mount Weather, Va., and make of it a hospital for sailors and other patients from the Atlantic seaboard. Within another year locations for hospitals in Southern California and the southeastern part of the United States will be selected.

Sarah Goodridge Hospital Reopens.—Announcement has been received that the Sarah Goodrich Hospital of New Orleans (hereafter to be known as the Flint-Goodridge Hospital), which was closed for repairs and improvements, reopened its doors for colored patients on January 15, 1916. The hospital, located at 1556 Canal Street, is now modern, convenient and well equipped, with 56 beds, and answers a need that has long been felt among the colored population in New Orleans and neighboring towns.

Rabies in Coyotes.—A campaign has been started by the department of agriculture against rabies originating in coyotes and now said to be a menace to the people and stock in California, Oregon, Nevada and Idaho. Thirty persons have recently been treated for bites of coyotes at the State Hygienic Laboratory, Reno, Nev.

Conference on Medical Education.—The twelfth annual Conference on Medical Education, Public Health and Legislation will meet at Congress Hotel, Chicago, February 7 and 8, 1916. The Federation of State Medical Boards of the United States and the Association of American Medical Colleges will meet on February 9, 1916.

N. O. Presbyterian Hospital Celebrates.—The seventh anniversary of the N. O. Presbyterian Hospital was celebrated on January 14, 1916, and the occasion was marked by the ceremonies of breaking ground for the new building, the Corinne Casanas Free Clinic, and the flag presentation to the hospital by McDonough Council of the Junior Order of American Mechanics. Last year the Presbyterian Hospital treated free of cost in its clinics 9,205 cases, and 172 indoor charity patients. It filled 2,198 free prescriptions for clinic patients, and 374 free prescriptions for house charity cases.

Herter Lectures.—The first of a course of five lectures, under the auspices of the Herter Foundation of the University and Bellevue Hospital Medical College, was delivered by Prof. Victor C. Vaughan, of the University of Michigan, on January 10, 1916. The subject of the lectures was "Poisonous Proteins."

Murders in 1914.—According to Mr. Frederick L. Hoffman,

who has recently compiled a record of homicides in American cities during 1914, the total number of murders in the United States during that year was 8,000, of whom 80 per cent. were men. Memphis, Tennessee, had the highest number of murders, while Reading, Pa., had the lowest. New York had a higher rate than Chicago, and the eight cities mentioned as having the highest rates were all in the South. In Philadelphia and Boston the rate was very low. Sixty per cent. of the murders were done with firearms, 15.1 with cutting or piercing instruments, and most of the victims were between the ages of 25 and 34.

New York's Milk Storage.—Grade B milk, from which condensed milk is manufactured, fell 40,000 quarts below the average supply in New York City last month. This shortage is said to be due to the purchase of enormous quantities of condensed milk for the Allies and also to some extent to the effect of the recent cold weather on the cows.

Harvard Free Medical Lectures.—The annual series of free public lectures, to be given under the auspices of the faculty of medicine and Harvard University, will be held every Sunday afternoon at 4 o'clock, beginning January 2 and ending May 7, 1916.

Horse Meat Eaten.—On December 21, the Board of Health of New York City passed an amendment to the Sanitary Code permitting the slaughter of horses and the sale of the flesh as food. This measure went into effect on January 1 and revokes a prohibition which has been in force since New York became a city.

According to Reed.—A decision has recently been handed down by United States Judge Henry T. Reed, of Dubuque, Iowa, that a person does not violate the Harrison Drug Act merely by having drugs in his or her possession or on the person. The generally accepted interpretation of the act, however, is contrary to this ruling, as many persons have been arrested for having drugs in their possession.

Trachoma in Indianapolis.—About fifty cases of trachoma were recently found in Indianapolis. The disease was first found among the foreigners on the west side of the city, and then appeared among the school children. A thorough investigation of the situation was made by the health inspectors and physicians connected with the public schools. The school children and others found with the disease were quarantined, as the epidemic

is regarded as very dangerous, and a nurse was employed by the Board of Health to look after the trachoma cases and to give instruction in the homes concerning their treatment.

Seaman Medal Award.—Dr. William A. Fairburn, New York City, was awarded the Louis Livingston Medal for progress and achievement in the promotion of hygiene and the mitigation of occupational diseases.

American College of Surgeons' Endowment.—It has been announced that the American College of Surgeons has secured from its fellows an endowment fund of $500,000. This fund is to be held in perpetuity, the income only to be used to advance the purposes of the college. It is hoped by this means that lasting progress toward the purposes of the college will be assured.

The New Crowley Sanitarium formally opened its doors to the public on January 15, 1916.

The American Orthopedic Association announces the appointment of Dr. Mark H. Rogers, Boston, as Editor of *The American Journal of Orthopedic Surgery*, the only periodical in the English language devoted to Orthopedics. This Journal, which has now completed 13 volumes as a quarterly publication, will henceforth be issued monthly, the first number in the new form being that of January, 1916.

The office of publication has been transferred from Philadelphia to Ernest Gregory, 126 Mass. Ave., Boston.

Animal Investigation for Cancer.—During the past year. 64,500 animals were made use of by the George Crocker Cancer Research Fund Laboratory at Columbia University, New York City, in its investigations concerning cancer. The laboratory in its work with radium developed the results that the amount of radium, length of exposure and distance between the radium and the tissue were the three factors concerned in the action of radium on cancer cells.

Baby Week.—March 4-11, 1916, has been chosen as "Baby Week" and the health authorities of thirty-nine states have already pledged their co-operation in its observance. The movement is to be nation-wide and much interest has been manifested and many inquiries have been sent to the Federal Children's Bureau for information regarding the Baby Week. For further information, apply to the Bureau in Washington, D. C.

Cooks and Waiters Examined.—As a means of safeguarding

the purity of food given to people who eat in public dining-rooms, 2,000 cooks and waiters have been ordered physically examined twice a year, by the health authorities of Toronto, Canada, to ascertain that they are free from disease.

A New Journal.—The first issue of the *Journal of Cancer Research*, the official organ of the American Association for Cancer Research, has appeared for January, 1916. Dr. Richard Weil, of New York, is the managing editor of the new journal and is assisted by an editorial committee composed of members of the association. The journal will be issued quarterly.

W. B. Saunders Company Catalog.—An eightyfour page catalog for 1916 has just been issued by W. B. Saunders Company, publishers, of Philadelphia and London. It is a descriptive catalog in the truest sense, telling you just what you will find in their books and showing you by specimen cuts the type of illustrations used. It is really an index to modern medical literature, describing some 300 titles, including 45 new books and new editions not in former issues.

Relief Fund for the Belgian Profession.—The report of the treasurer, Dr. F. F. Simpson, of the committee of the American physicians for the aid of the Belgian profession, shows, for the week ending January 8, 1916, a total disbursement of $7,310.04, and a balance on hand of $626.82. The total receipts are $7,936.86.

The H. K. Mulford Company announces the establishment of a department of Sanitation and Epidemiology, under the executive management of Thomas W. Jackson, M. D., expert in preventive medicine, sanitation and the study and control of epidemic diseases. Work in this field is frequently beyond the reach of the existing health and sanitary departments of the various municipalities and smaller towns, on account of limited appropriations. The department does not propose to enter into competition with the constituted health authorities, local, state or federal, but to assist these authorities in every way. The work is essentially one of service and education. The resources and equipment of the Mulford Laboratories, Chemical and Bacteriological, will be utilized, thus placing at the disposal of the new department the entire laboratory facilities of the H. K. Mulford Company.

Vacancies at Touro Infirmary.—There are four vacancies

on the intern staff at Touro Infirmary, New Orleans. Applications from graduates of A plus colleges to fill these vacancies will be accepted by the superintendent, from whom full information may be obtained.

Compulsory Registration of Patent Medicines.—Regulations providing for the compulsory registration of patent, proprietary or secret formula medicines with the Department of Health have recently been formulated by the Department of Health of New York City. The law went into effect on January 1, 1916.

Personals.—Surgeon Rudolf von Esdorf, U. S. P. H. S., will go to Dallas early in the spring to make a malarial survey of the city and to give practical advice on the extermination of the mosquito.

Drs. J. B. Elliott, Jr., C. C. Bass, J. B. Guthrie, J. D. Weis and J. T. Halsey, of New Orleans, went to Birmingham, Ala., recently to assist in the formation of the Interurban Clinical Club.

Dr. Rufus H. Von Kleinsmid, president of the University of Arizona, has been chosen president of the American Association of Clinical Criminology.

Removals.—Dr. W. L. Wharton, from Naples to Morley, La.

Dr. J. B. Shamburger, from Camp Hugh to Cottondale, Ala.

Dr. W. F. Shepard, from Henderson to Haslam, Tex.

Dr. John Shahan, from Attalla to Gadsden, Ala.

The *Journal of the South Carolina Medical Association,* from Anderson to Seneca, S. C.

Died.—On January 4, 1916, Dr. J. S. Beavers, a prominent physician of Wesson, Miss., aged 76 years.

Book Reviews and Notices

Principles of Human Physiology. By Ernest H. Starling, M. D., F. R. C. P., F. R. C. S., etc. Second edition. Lea and Febiger, Philadelphia, 1915.

Starling realizes the fact that general physiology depends upon a thorough knowledge of cell physiology, and therefore deals fully with this essential in the first chapters of his book. This is followed by a clear discussion of the functions and constituents of protoplasm.

The chemistry of the food-stuffs, especially protein, as well as colloidal chemistry and the subject of organic synthesis are very clearly explained. Considerable space is rightly devoted to muscle and nerve physiology, and this important subject has been brought up to date. The sections dealing with the nervous system are very clear; the chapter on the autonomic nervous system is carefully illustrated, as well as explained in detail. The special senses are also well handled. The chapters discussing the different phases of dietetics and metabolism are of great value. The physiology of the circulation has been thoroughly rewritten, and is very complete. In this section the use of long paragraphs is somewhat confusing.

The chapter on lymph and tissue fluids is too brief, when we know Starling's knowledge of this subject. The chemistry of respiration is very thoroughly presented; the proven newer methods of gas analysis are explained as well as the deduction to be drawn from these methods. The part on Physiology of Reproduction should be enlarged; this important subject in practically all text books is passed over too lightly.

It has been a pleasure to review this work of Starling. The reader will be impressed with the thoroughness and completeness with which the author has covered a very difficult subject.

F. P. CHILLINGWORTH.

A Manual of Surgery, for Students and Physicians. By Francis T. Stewart, M. D., Fourth Edition. P. Blakiston's Son and Co., Philadelphia, 1915.

This is an excellent manual well adapted to the purpose in view, to supply the student and practitioner of medicine with a brief but sufficiently comprehensive review of the present status of surgery. We like very much the terse but clear style; there are no superfluous words, the statement being always direct and to the point. There is little to criticise, but we would comment upon a few points. We object to the statement that spinal analgesia is "destined to pass into desuetude." We think it has a definite place in surgery, though much more restricted than formerly. We also

feel that the author should have laid more stress upon the service which adrenalin has rendered in local anesthesia. Without it novocain could not hold its own, but with it, as Braun says, it has been possible to make it a complete substitute for cocain in nearly all fields of surgery.

He mentions also the use of citrated blood in transfusion without saying anything of its dangers. PARHAM.

The Book of the Fly—A Nature Study of the House Fly and Its Kin. The Fly Plague and a Cure. By G. Hurlstone Hardy, with an introduction by Holford Ross. Rebman Co., New York.

In small space a comprehensive study of many varieties of flies is given by the author. Their habits and their modes of development are described. There are numerous illustrations and an appendix in which more exact classification and identification of flies are presented in explicit detail. The capters on the prevention of flies and on the "Cure of the Evil" give a number of original suggestions. DYER.

Diseases of the Skin and the Eruptive Fevers, by Jay Frank Schamberg, A. B., M. D. Third Edition. Thoroughly Revised. W. B. Saunders Company, Philadelphia and London, 1915.

We have reviewed the previous editions of this book and in welcoming a revised form we can only emphasize the qualities which have always commended this publication, above all the invaluable chapters on the eruptive fevers which really deserve a separate volume. Then come the excellent illustrations throughout the book, carefully chosen and free of the too frequent attempt at color which usually defeats the purpose of the demonstration of the diseases discussed in the text. Among American texts on skin diseases, this book has a well established place. DYER.

Habits that Handicap, by Charles B. Towns. The Century Company, New York.

This book aims directly at the drug forming habits and their relief. Responsibility is placed upon the physician as the chief factor in both the phases of habit and of relief. The book was evidently written before any efficiency had developed in the administration of the Harrison Act, for, taken at a full reading of the text, it must be looked upon as an arraignment of the Act and its administration, as the reader would certainly conclude that opium derivatives, cocain and the like were still purchasable over the counter. It is rather difficult to understand how this is now possible, and the large number of public charges among the habitues would argue either that the writer was not cognizant of present facts or that he did not bring his text up to date. The chapters which deal with the alcoholic are forcible and those discussing tobacco are also interesting.

One reads the whole book with the main idea of some suggestion for the treatment or proper care of the drug habit, and puts it down with the impression that it is a clever attack upon the alleged ignorance and skepticism of the average physician and a well worded advertisement of a treatment which is nowhere defined. Without the introductory pages and a concluding article by two well known American physicians, the book would suggest the effort of a reformer. It is surely not instructive.

DYER.

Student's Text Book of Hygiene, by W. James Wilson, M. D., D. Sc., D. P. H. Rebman Company, New York.

The arrangement, the comprehensive yet concise text, the illustrations and an exceptionally fine letter press, all make their immediate impression upon the reader of this work. The definitions are matured and the orderly and logical discussion of each subject show a careful preparation of the material.

Each subject usually discussed in a text book on Hygiene finds place, while the author has seen fit to add two chapters of timely importance: The one on Heredity and Eugenics, and the other on Tropical Diseases, each being given just enough space in the book to allow their review without undue stress. The book is altogether commendable and is especially noteworthy as modern in its facts as well as its theories.

DYER.

Primary Studies for Nurses, by Charlotte A. Aikens. Third Edition. Thoroughly Revised. W. B. Saunders Company, Philadelphia and London, 1915.

This book contains a great deal more than any nurse should be required to know, but, at the same time, it provides the material from which the nurse may learn much.

The practical part of the text, as evident in the applied instruction in each chapter, is valuable and this is especially true of those chapters on hygiene, administration of medicines and on diet. The demand for a new edition is some evidence of the usefulness of this book.

DYER.

Cancer, Its Study and Prevention, by Howard Canning Taylor, M. D. Lea and Febiger, Philadelphia and New York, 1915.

In some 300 pages the author has given a review in summary of the occurrence of cancer in all of the locations of the human body in which such are found. The descriptions carry detail of types, statistics, theories and the indications for treatment where such may avail. Each type of cancer in each region is discussed as it may occur and, except in the initial chapters, where theories and incidence are presented, there are no generalizations.

To the student of cancer Dr. Taylor has rendered a valuable service in compiling so much material for ready reference.

DYER.

Progressive Medicine. A Quarterly Digest. Edited by Hobart Amory Hare, M. D., Assisted by Leighton F. Appleman, M. D. Vol. XVIII, No. 3. Lea and Febiger, Philadelphia and New York.

The usual high character of medical critical review distinguishes this current volume of a standard publication. Drs. Ewart, Gottheil, Davis (E. F.) and Spiller are the contributors and there are enough of articles to interest any reader, whether obstetrics, nervous or skin diseases or the visceral disorders are discussed. This publication continues to fill its place in contemporary medical literature. DYER.

Exercise in Education and Medicine, by R. Tait McKenzie, B. A., M. D. Second Edition. Thoroughly Revised. W. B. Saunders Company, Philadelphia and London, 1915.

Too much praise cannot be given the author of this work. He has not only compiled an enormous amount of material, but he has also arranged it with the best of care so as to present a logical book. The illustrations are numerous (478 in all) and each of them apt and excellent. The book gives a vast amount of information, from which the educator, the athletic director, the man or woman interested, and the physician as well, may draw both inspiration and exact knowledge. Every sort of detail is engaged from school calisthenics to the national sports. The book is a regular thesaurus of the subject, for where the material in the text does not satisfy the author's idea of completeness he takes pains to give the references for wider reading.

The reviewer has found much to encourage a future reference to the book and this further induces the recommendation that every one who can should read it and thereby profit. DYER.

Publications Received

W. B. SAUNDERS COMPANY. Philadelphia and London, 1915.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. December, 1915.

Catalogue of Books. Revised to January, 1916.

C. V. MOSBY COMPANY. St. Louis, 1915.

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MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of Oew Orleans for December, 1915.

Cause.	White	Colored	Total
Typhoid Fever	7	4	11
Intermittent Fever (Malarial Cachexia)	.....	.....	....
Smallpox	.....	.....	....
Measles	.....	.....	....
Scarlet Fever	.....	.....	....
Whooping Cough	.....	.....	....
Diphtheria and Croup	6	2	8
Influenza	50	21	71
Cholera Nostras	.....	.....	....
Pyemia and Septicemia	2	.....	2
Tuberculosis	41	46	87
Syphilis	3	1	4
Cancer	18	9	27
Rheumatism and Gout	.....	.....	....
Diabetes	4	1	5
Alcoholism	.....	1	1
Encephalitis and Meningitis	1	4	5
Locomotor Ataxia	.....	.....	....
Congestion, Hemorrhage and Softening of Brain	18	12	30
Paralysis	4	3	7
Convulsions of Infancy	1	.....	1
Other Diseases of Infancy	9	16	25
Tetanus	1	2	3
Other Nervous Diseases	4	1	5
Heart Diseases	95	52	147
Bronchitis	4	3	7
Pneumonia and Broncho-Pneumonia	38	42	80
Other Respiratory Diseases	2	2	4
Ulcer of Stomach	2	.....	2
Other Diseases of the Stomach	2	1	3
Diarrhea, Dysentery and Enteritis	27	16	43
Hernia, Intestinal Obstruction	8	3	11
Cirrhosis of Liver	11	2	13
Other Diseases of the Liver	2	1	3
Simple Peritonitis	.....	.....	....
Appendicitis	4	1	5
Bright's Disease	34	18	52
Other Genito-Urinary Diseases	6	6	12
Puerperal Diseases	5	3	8
Senile Debility	5	.....	5
Suicide	7	1	8
Injuries	23	25	48
All Other Causes	27	14	41
Total	471	313	784

Still-born Children—White, 18; colored, 25. Total, 43.

Population of City (estimated)—White, 272,000; colored, 101,000. Total, 373,000.

Death Rate per 1000 per Annum for Month—White, 20.78; colored, 37.19. Total, 25.22. Non-residents excluded, 22.62.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure 30.10
Mean temperature .....57.
Total precipitation ..... 5.07 inches
Prevailing direction of wind, southeast.

New Orleans Medical and Surgical Journal.

VOL. LXVIII. MARCH, 1916. No. 9

Original Articles

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. A complimentary edition of one hundred reprints of his article will be furnished each contributor should he so desire. Covers for same, or any number of reprints, may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

THE TREATMENT OF EXTRAUTERINE PREGNACY.

By AIME PAUL HEINECK, M. D.,

Professor of Surgery, Chicago College of Medicine and Surgery; Surgeon to Rhodes Avenue, Jefferson Park and Frances Willard Hospitals, Chicago, Ill.

Extra-uterine gestation is of far more frequent occurrence than we believe. The operative treatment of this distinctly surgical condition can be discussed more intelligently after we have become familiar with the possible terminations of an ectopic pregnancy abandoned to the unassisted resources of nature.

An extra-uterine (tubal, ovarian or tubo-ovarian) pregnancy may go to term, and a living child be delivered, through channels created by the surgeon. In connection with this termination, one must keep in mind that extrauterine children frequently die in the first few days of life; many of them have lived only a few hours. They are frequently the subjects of deformity. The operation necessitating their removal from the maternal organism may prove fatal to them. It may prove fatal to the mother, either immediately, from surgical shock or of excessive hemorrhage, or remotely, from toxemia, septicemia, or pyemia.

The child may go to term, remain undelivered, and die, persisting in the maternal organism.

The fetus may die previous to term. Small embryos when expelled into the peritoneal cavity are promptly absorbed unless the placenta retains a firm attachment to the tube. Fetuses that die at an advanced state of development cannot be absorbed.

The ectopic fetus may: a. Putrefy. b. May become septic: 1. From communication with neighboring organs. 2. From contiguity with neighboring organs. c. May become converted into a friable fatty substance, then constituting what is known as an adipocere. d. May be transformed into a lithopedion, of which three chief types are distinguished. e. May become encysted by a connective tissue membrane, and remain quiescent for a time or permanently. The fetal cyst: 1. May be merely a mechanical inconvenience to the maternal organism. 2. May mechanically interfere with a subsequent intrauterine pregnancy; and may have to be removed to allow an intrauterine pregnancy to go to term. g. It may irritate contiguous organs, excite rectal tenesmus, vesical tenesmus, painful micturition, etc., or determine pressure symptoms; intestinal obstruction by compressing the intestines, urinary retention by compressing the bladder or ureters or cause various displacements of the uterus. It may cause errors in diagnosis. h. After the death of the fetus, the gestation-sac may be considered as a fetal cyst. After death, the liquor amnii is absorbed. No more is secreted. The cyst shrinks. The walls may, and frequently do, become adherent to surrounding organs or to surrounding tissues, viz., bladder, vagina, intestinal canal or abdominal wall, by either or by several of which channels the cyst may eventually, completely or incompletely, eliminate its decomposing contents; hence the cyst may rupture: 1. Into the bowel, by one or several openings; 2. Into the vagina; 3. Into the urinary bladder and the fetal bones and other cyst contents be expelled per urethram; 4. Into the rectum and the fetal bones and other cyst contents be expelled through the anus; 5. Into the uterus; 6. Into a cyst of other nature contained in the abdominal cavity; 7. Through the abdominal wall; 8. The fetal cyst may open and be eliminated through more than one channel in the same patient.

Rupture of the gestation-sac may take place before or after the death of the fetus. J. B. Sutton says that primary rupture takes

place in the majority of cases between the third and the tenth week. Rupture is one of the terminations of tubal pregnancy, be the pregnancy tubo-uterine, intramural, isthmic, or ampullary, etc. Ovarian pregnancies are subject to the same accident. Primary or secondary gestation-sacs may rupture. The gestation may be arrested by this accident, or it may continue uninterrupted, though changed in type. The rupture is associated with hemorrhage, slight or profuse, circumscribed or diffuse, belonging to one of the three following types, or to a combination of two or of all these types: a. Extra-tubal; b. Intra-tubal; c. Intramural. If the amniotic sac be ruptured and there be an outflow of the amniotic fluid, gestation will come to an end.

Extra-tubal rupture may occur: a. Into the peritoneal cavity; if the ovum does not perish, the pregnancy will be continued as a tubo-peritoneal or peritoneal pregnancy. b. Between the folds of the broad ligament. Pregnancy may here continue as an intra-ligamentary pregnancy, called by some authors a tubo-abdominal pregnancy. Intra-ligamentary pregnancy is far more infrequent than peritoneal pregnancy. c. An intra-mural rupture may lead secondarily to an intra-tubal or extra-tubal rupture. In intramural rupture, a thin layer of muscle tissue and peritoneum which separates the blood-sac from the peritoneal cavity. It may be compared to the condition that obtains when a saccular aneurysm ruptures and the blood escapes interstitially. Intra-tubal rupture may, if the abdominal opening of the tube be occluded, lead to an accumulation of blood in the cavity of the tube, viz., hematosalpinx. If the abdominal end of the tube be not occluded, the blood passes out of the tube into the peritoneal cavity, giving us a pelvic hematocele or a hemoperitoneum. The ovum, continuing to develop in the tube, may secondarily rupture, either into the peritoneal cavity or between the folds of the broad ligament, and gestation therein continue. If one variety of rupture fail to relieve the tension, the gestation-sac will probably rupture in another direction. The ovum may be carried out of the tube by the intra-tubal hemorrhage, giving us the condition of tubal absortion. The hemorrhage that attends and follows rupture usually requires immediate surgical interference.

We then have, as most alarming complications of tubal or ovarian ruptures, hemorrhages, small or large. The amount of blood discharged bears no relation to the extent of the rupture. Most

severe hemorrhages can occur from very small orifices. The rupture may be punctiform in size; may be a large tear; may be almost a complete rending of the tube. Rupture into the peritoneal cavity may lead to the formation of a hematocele, or to a flooding of the peritoneal cavity; the latter will cause the patient's death if the hemorrhage be not operatively arrested. There may be one severe and perhaps fatal intra-peritoneal hemorrhage, or there may be recurring hemorrhages, causing maternal death. Intra-peritoneal hemorrhage due to a ruptured ectopic gestation-sac has the same gravity as intra-abdominal hemorrhages due to other causes. The signs and symptoms of acute anemia are quickly produced.

If the extra-tubal rupture be between the folds of the broad ligament, the extravasation and accumulation of blood therein will separate these folds, and a pelvic hematoma will be produced. This hematoma is almost invariably one-sided, and, needless to say, is on the side of the rupture. In some cases, however, it may dissect forward between the uterus and bladder, or backward around the uterus beneath the peritoneum and extend to the opposite side. In those cases, where the tension within the hematoma is sufficiently great, rupture may take place into the peritoneal cavity, giving up the combined condition of both intra-peritoneal and extra-peritoneal hemorrhages. The same may occur in a hematosalpinx. The excessive tension may lead to extra-tubal rupture into the peritoneal cavity, or between the folds of the broad ligament, or in both directions. The hemorrhage associated with the rupture of a tubal or an ovarian gestation-sac may, in itself, prove fatal, may lead to formation of a pelvic hematoma, or to the formation of a pelvic hematocele. These encysted blood collections, hematomata or hematoceles, may be and frequently are partially or completely absorbed, may persist as fibrous bands or masses, may become infected and thus be the seat of a suppurative inflammation. If the inflammation remain circumscribed, an abscess is formed. If the inflammation spreads to, or if the abscess bursts into the peritoneal cavity, a circumscribed or diffuse suppurative peritonitis results. If the inflammation extends to the retro-peritoneal connective tissues, a cellulitis results, with all its accompanying dangers. The expulsion of the uterine decidua does not imply the death of the extra-uterine fetus.

The migration of the ovum into the abdominal cavity, through

the ostium abdominale, is known as tubal abortion (Bland Sutton). We may have tubal abortion. Tubal abortion may also lead to hematosalpinx. Usually, however, the blood escapes freely through the ostium abdominale into the cul-de-sac of Douglas, and either becomes encysted there, or escapes into the general peritoneal cavity.

In the early stages, abortion and rupture are due directly to the destructive action of the trophoblasts on the peritoneal and mucous surfaces. They can be directly due to increase of tension caused by hemorrhages from vessels, the walls of which have been destroyed by the ectoblastic cells. Tubal abortion may be complete, or may be incomplete. In the former, there is usually one attack of pain and weakness. In the incomplete form, we have repeated attacks of weakness. The abortion, if the amniotic sac remains intact, and if the ovum resists absorption, leads to a tubo-peritoneal or peritoneal pregnancy. If the villi or placental attachments are destroyed, the ovum being unable to form secondary attachments to other structures, dies.

TREATMENT.

We assert without the least hesitancy that this is as truly a surgical disease as appendicitis, and though, as in this disease, a clinical cure may at times be obtained by non-operative measures, it is not common for that clinical cure to be an anatomical cure. We maintain with emphasis that the most conservative treatment is that which saves the most human lives. In ectopic pregnancy, the viability of the child should not be considered, except as it endangers the life of the mother. The extra-uterine fetus is a parasite, a malignant new growth. We must destroy the fetus to save the mother. From the standpoint of treatment, we must consider: (1) Will the patient live (a) if she be abandoned to nature; (b) if she be operated on. 2 Are the dangers incident to opening the peritoneal cavity less than those of rupture of the gestation-sac? Without surgical aid, extra-uterine pregnancy always terminates fatally to the child, and frequently causes the mother's death.

Nature's tedious methods of relief and the many dangers to which the woman is obviously exposed during its occurrence justify surgical interference. Even the absorption of large uninfected collections of blood is far more prolonged than post-operative convalescence.

In the hands of the average operator, the only possible dangers to which the mother is exposed by the operative removal of the dead or live ectopic fetus are sepsis, hemorrhage and shock. The first can be avoided, the second can be largely controlled, and the third can be minimized and almost always overcome.

Some operators make use of the terms "primary laparotomy" and "secondary laparotomy." In the former, the operation is performed during the life of the fetus. It is in accord with the theory and practise of modern surgery. It attacks tissues while they are healthy, in preference to awaiting nature's blind efforts to improve conditions. Secondary laparotomy is the operation performed after the death of the fetus. Grandin and Jarman, in discussing operative treatment, say: "The almost absolute mortality-rate of the past has been converted into the almost certain recovery-rate of the present."

The diagnosis of ectopic gestation is in itself an imperative indication for operation. Lives can be saved by accurate diagnosis, prompt decision, and skillful operation. The profession in general has not exhibited that keenness and alertness toward extra-uterine pregnancy which has characterized its study of appendicitis in the past few years.

The first indication is to stop the hemorrhage. This indication is urgent. Hypodermic medication will not accomplish it. To stop this hemorrhage, you cannot depend upon the coagulability of the blood, upon the lessened force of cardiac action; upon such agents as heat, cold, styptics, and the like. You must open the abdomen; you must stop the hemorrhage at its source by ligating bleeding-points with aseptic absorbable ligature material, if you have it at hand; with antiseptic non-absorbable ligature material, if the former be not at hand.

Even in the absence of urgent symptoms, do not delay operation. As long as the embryo or fetus lives, the placenta increases daily in size, in vascularity, and in difficulty of removal. Furthermore, every day, the increasing size of the child and of the placenta adds to the danger of secondary rupture.

Having decided to operate, two pathways are open: 1. Through the vaginal wall. 2. Through the abdominal wall. In some difficult cases you may have to use both the abdominal and the vaginal routes. We recommend the vaginal route in only one condition, viz., pelvic abscess, when the gestation-sac has been converted

into a pelvic abscess, where suppuration has occurred in an intra-ligamentary fetal cyst, or in all intra-ligamentary hematoma. The opening of pelvic abscesses by way of the vagina is a safe and wise surgical procedure. The results are almost always very satisfactory. 3. In those cases where the fetal parts closely press against the vaginal wall. Even here it may be necessary to make use of the abdominal route, in addition to the vaginal route.

Under all other conditions, in the absence of a contra-indication, we recommend that the abdominal route be employed, because the operator is enabled: 1. To remedy at the same time coexisting pathological conditions, as hydrosalpinx, obliteration of the abdominal ostium of the unaffected tube, etc. 2. To arrest the hemorrhage with greater rapidity. 3. To secure a more complete and a more careful hemostasis. 4. To make a more direct examination to judge better the extent of damage, and thereby make a more accurate diagnosis. 5. To make a more conservative ablation of organs, and to have the operative field much better under control. 6. To more quickly come in contact with the condition, and to remove better and more completely the fetal sac and its contents. The separated ovum may ascend in the abdominal cavity, and it may be very difficult to find and remove it by the vaginal route. An abdominal incision enables the operator in case of an incorrect diagnosis to treat those conditions that simulate ectopic gestation. In operating, sight, as well as touch, is a very useful aid.

The greatest difficulty that we encounter near term, at term, or after term in operating for ectopic gestation, is connected with the removal of the placenta. A slight detachment of the placenta often results in alarming hemorrhage.

We make use of an incision about one-half inch to one side of the median line; the edges of the resulting wound are better adapted to our method of suturing the abdominal wall. Avoid cutting the epigastric vessels. Avoid cutting the urachus. Cutting into a patulous urachus is as significant as cutting into a urinary bladder. The cut must be repaired. Make use of the Trendelenburg position. The patient must be placed in this position gradually, not suddenly. The return to the horizontal posture must also be gradual. The Trendelenburg position facilitates the gravitation of the intestines towards the diaphragm. It permits a better view of the pelvic tissues or organs.

In all operations for extra-uterine gestation, the opposite tube and ovary should be carefully examined. In a few instances, the condition is bilateral. Extra-uterine pregnancy in some individuals has recurred.

Never make a needless sacrifice of tissues or organs. In the absence of a positive indication, such as a highly contracted pelvis, preventing the birth of a living child, etc., never remove the unaffected tube or ovary. As most extra-uterine pregnancies are tubal, early operation will permit the preservation of the ovary. The preservation of the ovaries is of benefit to the patient. Their removal causes the distressing symptoms of premature menopause.

The main difficulty in early and late operations is hemorrhage. The ideal treatment for hemorrhage incident to operations undertaken for the removal of ectopic gestation-sac is prophylaxis. Therefore, do not provoke uncontrollable hemorrhages. Proceed only after having well sized up the situation. Hemorrhage must be controlled by ligation or by compression of the bleeding points. A normal salt solution must not be given before the bleeding-points have been controlled or secured, either intra-venously, subcutaneously, or per rectum. Once the bleeding-points have been controlled, its use is of signal benefit. It increases the volume of the circulating fluid. Do not close up the abdomen until you are satisfied concerning the hemostasis. These hemorrhages are most profuse if the fetus is alive at time of operation.

If possible, avoid denuded peritoneal surfaces. They are possible avenues of infection. After a unilateral ablation of the adnexa, suture to each other the folds of the broad ligament, from the superior pelvic strait to the angle of the uterus. Peritonization—that is, the covering with peritoneum of all denuded surfaces—lessens adhesion formation. These adhesions may be attended with colicky and other pains; may cause intestinal obstruction. This peritonization lessens hemorrhage, and creates a barrier capable of limiting the extension of inflammatory processes.

In attempting to remove the fetal sac and its contents, be careful lest these efforts inflict much damage upon contiguous organs. Repair such damage before closing up the abdominal cavity.

The first condition, the treatment of which we will consider, is that of early unruptured ectopic pregnancy. In this case, there

are usually no adhesions. If adhesions be present, they are separated, as in all other intra-abdominal surgical interventions, with great care and by the same methods. The incision (about three inches in length) is carried through the different layers of the abdominal wall into the peritoneal cavity. The incision is slightly to one side of the median line. It is an infra-umbilical incision. After the patient has been gradually placed in the Trendelenburg position, the intestines and the general peritoneal cavity are walled off from the pelvic cavity by compresses of gauze. The first step is to locate the uterus.

Using the fundus of the uterus as a guide, and proceeding to the right and to the left, examine both tubes and both ovaries. Ectopic pregnancy is located with about as equal frequency on one side as on the other. Separate the gestation-sac from any adhesions, if such exist. Then remove the gestation-sac (which is usually tubal), as a whole, if possible, by a typical resection of the Fallopian tube involved. Suture the folds of the broad ligament together; leave no denuded peritoneal surfaces. Close up the peritoneal cavity. Post-operative treatment is that of uncomplicated laparotomy. If the pregnancy be ovarian in type, and be early and unruptured, do a typical ovariotomy. Accuracy and rapidity in operating are as essential in these cases as in any other intra-abdominal work.

If the gestation-sac is ruptured and hemorrhage has occurred or is occurring, after opening the abdominal cavity, put the patient in a Trendelenburg position. Wall off the general peritoneal cavity by gauze compresses. Again, immediately locate the fundus of the uterus. Determine on which side is the ruptured gestation-sac. Seize the uterus with the hand preferably or with a double tenaculum, thereby locating and keeping in view the most important landmark. When you have determined on which side the rupture is (it is usually tubal), apply a clamp at the uterine end of the tube. This will stop all further hemorrhage from the ovarian artery of that side. Apply another clamp immediately below the tube, compressing the folds of the broad ligament, but not injuring the ovary. Then remove the affected tube and the gestation-sac. Ligate all bleeding points, suture the folds of the broad ligament and the tubal surface of the uterine stump. Remove as expeditiously as you can the easily removable blood and blood-clots contained in the peritoneal and pelvic cavi-

ties. Remove the embryo if it can be found without prolonged search. Let there be no needless exposure, no needless traumatizing of the intestines. Undue exposure, undue handling of the intestines, intensifies operative shock, and may be followed by the aperistaltic form of ileus. Post-operative treatment is that of acute internal hemorrhage for which a laparotomy has been performed. Use normal saline solution secundum artem.

The most dangerous conditions, from the maternal standpoint, are those in which the fetus is alive; the hemorrhage then may be fatal. In these alarming cases of hemorrhage, some authors have suggested that the abdominal aorta be compressed. If the placenta be attached to the line of incision, the hemorrhage will be profuse, but can be stopped by firm compression. In those cases in which the fetus is alive, we have two things to accomplish, and they must be accomplished with the preservation of the mother's life. The first thing to accomplish is the removal of a living child. The last and most important is the removal of the ovum; that is, the placenta, membranes, etc. We shall not often be called upon to operate in cases in which a living child is present. For a physician knowingly to abstain from operating in a case of extra-uterine pregnancy before it reaches term is, to say the least, injudicious. The best practise is to terminate these pregnancies early, or before the development of the ovum is much advanced.

Remove the fetus without disturbing the placenta. If the fetus is alive, the first thing to do after having opened the abdominal cavity and protected the peritoneal cavity by compresses from the outflow of amniotic fluid, is to remove the fetus, the umbilical cord having been ligated as in a normal pregnancy. Have the amniotic fluid escape externally as much as possible. Upon the maternal end of the umbilical cord a clamp is placed, the umbilical cord being cut either between the ligature and the clamp or between two clamps.

If the fetus has reached term or near term and is dead, there is some difference of opinion as to which operation is the preferable method—the immediate operation or the delayed operation—until the fetus has been dead for a month or longer. Our experience leads us to believe that the dangers attending delay are more than counterbalanced by the numerous dangers incident to the policy of expectancy, so that if the fetus is dead, be that death

recent or of some standing, we will, after thorough preparation, incise the abdominal wall. Exceptionally, our incision may carry us into the fetal sac. In such cases the peritoneal cavity will not be opened. This is liable to occur in some extra-peritoneal or broad ligament pregnancies. In this variety, the sac and placenta are entirely beneath the peritoneum. The latter may have been pushed up, even stripped for a considerable distance from the anterior abdominal wall. We will hastily remove the fetus without disturbing the placenta, ligating the umbilical cord near the placenta. Evacuate the contents of the sac, and then attempt to remove the sac and the placenta together, after having separated them from the surrounding structures to which they may be adherent. Usually, however, our incision carries us into the peritoneal cavity. In this instance, the patient is gradually placed in the Trendelenburg posture. The adherent intestines, omentum, and other viscera are separated, if feasible, from the sac, by tearing the adhesions apart or cutting them between ligatures. Hemorrhage must be controlled as you proceed. The general peritoneal cavity is protected by gauze compresses, which are numbered and counted, and then the incision is carried into the ovum. Occasionally, you may be able to remove the ovum as a whole. If the placenta is not safely removable, if the nature of the adhesions of the surrounding organs to the ovum is such that their separation would prove disastrous, content yourself with evacuating the fetal cyst and then suturing its walls to the abdominal wound. The sac must be packed daily until the placenta has been expelled and the sac-cavity obliterated. If the placenta is to be left behind, it is better that it be not disturbed and made to bleed.

The following methods have been employed:

1. The fetus, the umbilical cord, and the amniotic fluid have been removed. Everything else has been left in situ and the abdominal wall closed. This is an extremely risky experiment.

2. The fetus is removed, and more or less of the sac is resected. Drainage of the cavity of the sac is employed, and the placenta and sac are left for spontaneous expulsion. This is the most frequently employed procedure.

3. After the removal of the fetus, umbilical cord, and amniotic fluid, the placenta is removed in part—so much of it as is early separated—and the remainder is left to spontaneous absorption.

4. The placenta is left in situ after removing the fetus. Then, after the expiration of a certain time, the placenta is shelled out, when it is hoped that the blood-supply is spontaneously cut off.

5. The placenta and entire ovum are removed immediately. Ideal measure, if feasible.

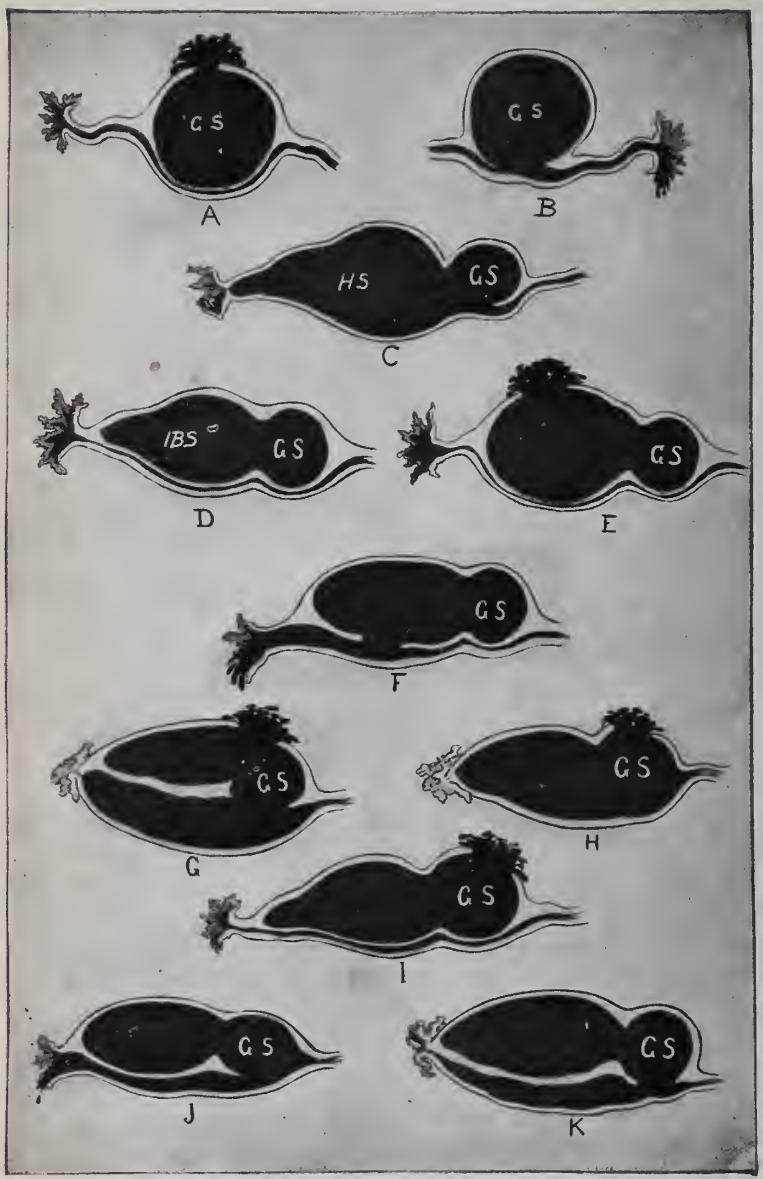
6. The placenta and gestation-sac are removed at once, likewise the neighboring organs, the uterus and ovaries, providing the hemorrhage cannot otherwise be arrested.

7. Preliminary ligature of the uterine and ovarian arteries of the side from which the placenta receives its blood-supply, followed by removal of the placenta.

There is no disputing the fact that the fetal sac and placenta should be removed completely if the procedure be consistent with the safety of the mother. The complete ablation of the ovum is theoretically the only perfect operation.

The method that we have had occasion to follow in those cases in which we feared to disturb the placenta is the following: After having incised the sac, we remove the fetus and other intra-ovulary contents, and ligate the umbilical cord close to its implantation, resect a portion of the sac-wall and sew what is left to the abdominal wound. This closes off the general peritoneal cavity. It leaves us a large pouch, which we pack tightly with strips of aseptic gauze. Many authors employ iodoform gauze instead. We endeavor to keep the cavity of this sac aseptic until all the placenta sloughs out of the wound. The elimination of the placenta by this method takes from twenty to fifty days.

In some cases, a vaginal drain has to be used, in addition to the abdominal drains. The first strips of gauze that are inserted in the fetal sac are made to serve the offices of a compress and of a tampon. They are used to check the bleeding. After the first dressings, the gauze strips are used more with drainage in view. After the fetal cyst has been sewed to the abdominal wall, or immediately previous, according to the exigencies of the case, the compresses that have been used to protect the general peritoneal cavity are removed. Sewing of the sac-wall to the abdominal wound shuts off all communication between the cyst and the peritoneal cavity. We use No. 3 catgut to suture the sac-wall to the abdominal wall. In some cases it will be found necessary to irrigate this pouch during the subsequent dressings, with some



ILLUSTRATING ARTICLE OF DR. A. P. HEINECK.

astringent aseptic or antiseptic solution. The abdominal wound is closed as in those cases in which a Mikulicz drain is employed. Post-operative treatment, symptomatic.

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FIGURE I.

A. Extratubal rupture of gestation-sac. Escape of blood into peritoneal capity.

B. Intratubal rupture, with escape of blood into peritoneal cavity through ostium abdominal of Fallopian tube.

C. Intratubal rupture, with retention. Hematosalpinx.

D. Intramural rupture. A layer of muscular tissue intervenes between the blood-extravasate and lumen of tube.

E. Intramural rupture, with blood-sac opening into peritoneum.

F. Intramural rupture, with blood-sac opening into lumen of tube.

G. Combined intratubal and extratubal and intramural rupture.

H. Combined intratubal and extratubal rupture.

I. Combined intramural and extratubal rupture.

J. Combined intramural and intratubal rupture, with escape of blood into peritoneal cavity.

K. Combined intramural and intratubal rupture, with retention of blood into lumen of tube.

GS. Gestation-sac. HS. Hematosalpinx. IBS. Intramural blood-sac.

SOME OBSERVATIONS ON THE ETIOLOGY, SYPMTOMATOLOGY AND TREATMENT OF PELLAGRA.

By WM. LEE SECCOR, A. M., M. D.,
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The etiology of pellagra has by no means been settled. The "Spoiled Maize" theory has been largely displaced by the "Unbalanced Diet" theory as advanced by Dr. Joseph Goldberger and his assistants. There are many observers, however, who are not yet satisfied in their minds as to the true cause of this increasingly prevalent disease.

While an unbalanced dietary or, more likely, the prolonged consumption of canned goods may have some influence on its etiology, from our observations we are of the opinion that lack of leguminous or nitrogenous foods in the dietary is not of itself the cause of pellagra. And we are quite sure that marked increase of these elements (milk, eggs, meat, beans, etc.) in the diet of pellagrins will not of itself cure the disease in all cases or even in a high percentage of cases.

Five cases of pellagra that have recently come under my observation had been under treatment for tuberculosis of the bowels for periods varying from six months to two years. These patients had made milk, raw eggs and rare beef their sheet anchor for months, yet their pellagrous symptoms continued to progress.

Two of my recent cases were the wives of well-to-do ranchmen. They lived on isolated ranches and ate bacon and "frijole" beans at least two hundred days out of the year.

In these seven cases the nitrogenous and leguminous foods were far in excess of normal. All of these patients, however, made extensive use of canned goods.

Five of my cases have occurred in families above the average, where good food in proper variety was always on the table; careful inquiry into the individual habits of the patients failed to disclose any marked error of diet.

A symptom that develops very early in some cases of pellagra is severe head pains. The pain may be in the temporal region, back of, or over one of the eyes, or it may extend over one side of the head, but in my cases it was usually unilateral and described by the patient as a pain, and not an ordinary headache.

Several of my cases have shown changes in the eye grounds and one developed vitreous opacities. Under treatment the eye grounds became normal, but the opacities remain.

The obscure origin and cause of pellagra has necessarily made its treatment, to a great extent, symptomatic and empirical. In the *Journal of the A. M. A.* of May 8, 1915, an article appeared which reported the results that Dr. E. E. Palmer and the writer had obtained in the treatment of pellagra by autoserotherapy at the Kerrville Sanitarium. Since this report was made I have treated a number of other cases, and always with the same excellent results.

We have recently received reports from various physicians who have used the autoserum treatment with success, not only in pellagra, but in other conditions where an increase in the antigenic function of the blood is desirable.

In our article in the *Journal of the A. M. A.*, we did not make our technic as clear as we should have done. So we published in the *Medical Record* of July 17 a detailed description of our method, under the title of "An Improved and Simplified Technic for Autoserotherapy."

We mentioned in the above articles that tonic doses of arsenic hasten the improvement under autoserotherapy. Arsenic has a marked action on the blood, producing a pronounced leukocytosis (Charteris, 1903). This condition of the blood serum produces a more potent exudate serum in the blister and gives more pronounced results.

In most of our cases we have found three drops of Fowler's solution after each meal amply sufficient. In a few cases, however, that did not respond readily to treatment, we have used ascending doses to ten drops after each meal.

We do not give the arsenic continuously, but only for a few days at a time during the course of the treatment. In some cases with pronounced anemia, we also use iron. For temporary relief of the burning in hands and feet, a strong solution of alum as a wash is quite effectual and, for the sore mouth, liquor antisepticus as a cleansing agent is very pleasing.

In the cases with marked nervous and mental symptoms, we use bromids for a few days until the serum treatment begins to show its effect and in some cases it is necessary to continue their use at intervals for several weeks. It is on these nervous and

mental symptoms, however, that the autoserum first shows its good effect.

In most of our cases one c. c. of the autoserum at intervals of one week proved perfectly satisfactory; in a few obstinate cases, however, larger doses and shorter intervals were used with benefit in all but two cases, where the symptoms were aggravated, and teh dosage was immediately dropped to 1 c. c. While many of our first cases were cured by autoserotherapy without paying any attention to diet, we now make it a rule to see that patients get a well-balanced ration, free from canned goods.

It is possible that the very rapid results that we have obtained in most of our cases have been partially due to change of climate, for nearly all of our cases are imported, coming from lower altitudes. The climate change, like arsenic, improves the blood and thus aids in the production of a more potent exudate serum.

We have had ample evidence that climate, diet or arsenic taken alone will not produce cures in any considerable number of cases. Furthermore, we have seen patients, who were either at a standstill or on the retrograde after prolonged treatment by sodium cacodylate, picric acid and diet, begin to improve promptly when placed on the autoserum treatment.

Translation.

AMERICAN LEISHMANIOSIS OF THE SKIN AND MUCOUS MEMBRANES.

By A. LAVERAN

Translated from the **Bulletin de la Societe de Medicine Exotique,** Nos. 5 and 6, 1915, by AUGUSTUS McSHANE, M. D., New Orleans.

HISTORICAL.—For a long time American physicians have observed, in several parts of South America, some diseases characterized by ulcerations of the skin and mucous membranes; but great confusion reigned in the chapter of ulcerative diseases, since it was impossible to base the diagnosis on a knowledge of the pathogenic agents. Different designations were given to the same disease appearing in different localities, and, on the other hand, the same name was applied to entirely different diseases that showed only a gross clinical resemblance. It can scarcely be doubted that American leishmaniosis has often been grouped with other different diseases under the names *buba* or *bouba,*

bouton de Bahia, and *Bauru ulcer* in Brazil; under the names of *uta* and *espundia* in Peru; of *pian-bois* in French Guiana; *forest-yaws* in British Guiana, and *boschyaws* in Dutch Guiana. Under the name of *buba,* cases of frambesia and blastomycosis have been confused with cases of leishmaniosis; under the name of *espundia,* cases of blastomycosis and leishmaniosis.

In order to escape from this chaos, we must abandon ancient names, at least for diseases of known pathogeny, and adopt names that express the nature of the disease. I will describe the disease that I am about to discuss, under the name of "American leishmaniosis of the skin and mucous membranes," or, to be brief, simply "American leishmaniosis."

A brief review of the works prior to 1909 will suffice.

In 1885, A. Cerqueira observed, in certain regions of Brazil, a dermatosis that he identified as "Biskra boil." In 1895, J. Moreira published some clinical reports that confirmed those of Cerqueira. In the same year, Adeodato gave a description of "Bahia boil," which he likens to the Oriental boil.

In 1895 and 1896, Breda, of Padua, described, under the name of *bouba brasiliana,* a disease of emigrants returning from Brazil, which should probably be identified as American leishmaniosis of the skin and mucous membranes. Breda thought that the disease was due to a bacillus, the existence of which was confirmed by Fiocca; this observer believed that he had succeeded in inoculating some small animals with a pure culture of the bacillus.

De Amicis also confirmed the observations made by Breda.

In 1901, Darier and de Christmas reported a case of *pian-bois* (wood-yaws) contracted in Guiana, and complicated with nodular lymphangitis, whence the authors inferred that *pian-bois* was a lymphangitis of a special nature.

E. Jeanselme, in his course of exotic dermatology, gives a brief description of *pian-bois,* which, however, he does not confound with Oriental button.

In 1909, several observers recognized that Baura ulcer (of Brazil) and pian-bois (of French Guiana) are suggestive of cutaneous leishmaniosis, and assimilate these dermatoses to Oriental sore.

A. Carini and W. Paranhos describe ulcers observed by them in laborers employed in the Bauru zone, in railway construction in northwest Brazil; smears made with shreds of tissue taken

from the ulcers showed in several cases Leishman bodies of the type *L. tropica,* and the authors identified the ulcer of Bauru as Oriental sore.

A. Lindenberg gives a good description of Bauru ulcer. He found Leishman bodies in these ulcers, which he identified as Oriental sore, and he proposed for it the name of "Ulcerative leishmaniosis."

Again, in 1909, Nattan-Larrier, Touin and Heckenroth published the history of a patient who had contracted an ulcer (forest-yaws) following a voyage to the neighborhood of Kourou (French Guiana); some Leishman bodies of the type *L. tropica* were found in small numbers in this case, as in the cases of Bauru ulcer studied by Carini, Paranhos and Lindenberg.

In 1910, Rao called attention to the existence of *Leishmania* ulcers in Manaos, State of Amazonas (Brazil), a region in which this disease had not previously been observed.

Pedroso and P. Dias da Silva succeeded in obtaining pure cultures of Leishman-bodies from Bauru ulcer in Novy-McNeal medium, and they reported a case that had seventy-two ulcers.

Bueno de Miranda described several cases of Bauru ulcer complicated with ulceration of the nasal mucosa and the tongue.

A. de Matta published five cases of ulcerative leishmaniosis observed by him at Manaos.

The localizations of the ulcers on the mucosæ, which are so characteristic of American leishmaniosis, were the subject of important works in 1911 and 1912.

A. Splendore called attention to the ulcerative affections of the nasal and buccal mucosæ common in Brazil; among these affections, according to him, some constitute a new form of leishmaniosis, whilst others are blastomycoses.

A. Carini published a typical case of leishmaniosis of oro-rhino-pharyngeal mucosa in a Brazilian who had contracted the disease in the State of San Paulo.

Escomel described, in 1911, a disease characterized by slow, progressive ulceration of the oro-rhino-pharyngeal mucosa, which is known in Peru under the name of *espundia.*

In a slice of palatine mucosa and in smears from patients attacked with espndia (sent by Dr. Escomel), Laveran and Nattan-Larrier found Leishman-bodies which seemed to differ

slightly from the *L. tropica,* and which they propose to designate under the name of *L. tropica,* variety *Americana.*

As a result of these observations, it follows that espundia is a leishmaniosis; however, it also appears, from a new communication of Dr. Escomel, that, under the name of espundia, there is confounded in Peru, as under the name of buba in Brazil, a blastomycosis with ulcerative leishmaniosis.

Darling and Connor observed, in the Canal Zone, several case- of cutaneous ulcers which they compared with Oriental sore.

Werner describes a case of cutaneous leishmaniosis at Rio Janeiro, complicated with lymphangitis, and Piraja da Silva published new observations of this disease at Bahia.

In 1912, several cases of leishmaniosis of the skin and mucosæ were reported to the Brazilian Society of Dermatology.

Flu examined at Paramaribo (Dutch Guiana) some patients attacked by a dermatosis known in that region under the name of *boshyaws,* or *boessi yassi,* and found that smears made from the scrapings from the edges of the ulcers contained Leishman-types.

Seidelin states that in Yucatan the laborers employed in gathering gum-chicle are often attacked by ulcers situated on the ear, whence the name "ear-ulcer of the chicleros;" in four cases out of six, Leishman-bodies were found in these ulcers.

In 1913 and 1914, observations relative to American leishmaniosis multiplied. Rabella, Terra, Terra and de Freitas, Crissiuma, Gorga, Padesca published new cases of leishmaniosis of the skin and mucosæ in the regions of Bahia, Rio Janeiro and Upper Amazon.

Bates describes the fifth case of ulcerative leishmaniosis observed in the hospital of Ancon (Canal Zone); the patient had ulcers on the helix of both ears, and on the nasal mucosa.

D. E. Andersen, Velez, R. P. Strong and his co-workers, Rebagliati, Monge, studied the uta of Peru, and showed that it was usually an ulcerative leishmaniosis.

Migone and Lindsay gave good descriptions of leishmaniosis in Paraguay, where it is commonly known as buba. Also, Migone reported a case of kala-azar observed at Asuncion (Paraguay), the only case known thus far.

We see from the foregoing that the existence of ulcerative leishmaniosis had been ascertained in French and Dutch Guiana.

Minett and Field, who had previously studied *forest yaws* in British Guiana, also succeeded in finding Leishman-bodies in the ulcerations.

CLINICAL FORMS—SYMPTOMS—COMPLICATIONS.

The disease is characterized at times by one or several ulcers, at others by ulceration of the mucosa of the nose, mouth, and pharynx, which are always preceded by cutaneous ulcerations. For convenience of description, the following forms may be distinguished: 1, Cutaneous leishmaniosis; 2, mucous leishmaniosis.

A—Cutaneous Leishmaniosis.—The disease attacks chiefly the exposed parts of the body; legs, forearms, face, ears; sometimes on the covered parts: chest, buttocks. It begins by one or two patches of itching erythema that seem to be produced by the bites of insects. At the end of two or three days, pustules appear on the erythematous patches, which soon burst and give rise to a small ulceration; the viscid liquid that comes from the surface of the ulcers hardens and forms a dark brown crust.

The ulcer is generally rounded or oval; it grows in size gradually until it becomes as large as a 50-centimes piece, or a one, two or five-franc piece; some ulcers of irregular shape cover the entire dorsum of the foot, or a large part of the ear, or even the circumference of an arm or leg.

The edges are sharply prominent, and of a violet color; the surrounding skin is red, œdematous, not very painful on pressure.

The base of the ulcer is generally covered with a brownish crust of varying thickness, under which is found a small amount of fetid sero-pus, and a red, granulating surface, that bleeds easily.

The amount of secretion varies. Migone says that some ulcers, with raised-up floors, fleshy and oozing, are not covered with crusts: that is the lardaceous moist buba; other ulcers become dry, scabby, excavated, with scanty secretion: that is dry buba.

The corresponding lymphatic glands are painful at first; the pain soon disappears, but the glands never return to their normal size.

The ulcers are sometimes complicated by suppuration of the lymph-nodes.

Generally, the ulcers are few in number in the same patient;

often there are only two or three; but sometimes there are twenty, or even more; the sores, of varying sizes, are scattered over the body.

The general symptoms are fever in the evening, pains in the joints, headache or lumbar pains. The symptoms are usually not well marked, or are even absent.

Progress is slow; the ulcers last for months, and even for one or two years.

The cases usually get well unless the mucous membranes become involved. After an average duration of seven or eight months, the ulcers begin to cicatrize, the edges become smoothed off, and the cicatricial tissue gradually extends from the circumference to the center. Cicatrization is frequently interrupted by relapses.

The scars are characteristic: their edges are stellate, and the central part is parchment-like and discolored.

Some ulcers leave mutilating scars when they are located on the face; when the ear is involved, the pinna may be partially destroyed; shrinking cicatrices of the eyelids or nostrils may also cause disagreeable and troublesome deformities in a functional way.

B—LEISHMANIOSIS OF THE MUCOUS MEMBRANES.—As a general rule, ulcerations of the mucous membranes develop only after the cutaneous lesions; Terra and de Freitas, Crissiuma, however, admit that leishmaniosis may originate in the nasal mucosa; the cutaneous ulcers are often cicatrized when the mucous ulcerations begin; these latter are not the result of the propagation of an ulcer of the lips or the wing of the nose to the neighboring mucosæ, such as frequently occurs in Oriental sore.

Carini, Escomel, Splendore, Migone communicated to the *Société de Pathologie Exotique* some excellent works on naso-bucco-pharyngeal leishmaniosis; I will borrow freely from these papers, particularly Escomel's.

CLINICAL FORMS—SYMPTOMS, COMPLICATIONS.

"The disease," says Escomel, "commences by an atonic ulcer, developing from a little papule (bouton), which sometimes attains a lengths of ten centimeters or more; the seat of the ulcer is on the forearm, legs, neck, chest, back or shoulders, more rarely on the face or hands. That is the espundic chancre (chancre espundique). This granular ulcer, with rounded edges, bumpy pseudo-epithelioid surface, secretes a thick pus, which is the source of the scabs which

may persist even for years in spite of the most energetic treatment.

"After a variable length of time the ulcer heals, leaving a well-marked scar; after a time, sometimes years, the lesions appear on the nasal and buccal mucosæ. During this time the general condition of the patient does not seem to suffer.

"The lesions usually begin in the columella of the nose, and are accompanied by a chronic coryza; more rarely they begin in the mouth (vault of the palate); the ulcerations extend to the nasal fossæ, velum palati, tonsils, pharynx, larynx, and even to the lobes of the ears and the face. The course of the disease may run for fifteen, twenty, thirty years, or even longer; sometimes a complication carries off the patient, who leads a miserable life on account of his repulsive aspect and fetid breath.

"The spreading of the nose due to the destruction of the septum is characteristic, and enables one to make a diagnosis at sight.

"When the mouth is attacked, the aspect of the palatine vault is typical. The mucous membrane is thickened, oozing, granular, traversed by grooves of varying depth which separates the lobes and lobules; among these grooves, two are quite constant in their occurrence, crossing each other near the median line, one of them extending from behind the incisior teeth toward the velum palati; and the other extending transversely from one molar region to the other. I have called these characteristic grooves the **palatine cross of espundia.**

"I have seen a patient die of uncomplicated espundia, which is very rare; he succumbed to a cachexia similar to that of cancer, with amyloid degeneration of the viscera; the patient had had his initial lesion on the forearm thirty-two years before. The lesions extended down to the trachea and œsophagus; the stomach and bronchi were not involved."

Laveran and Nattan-Larrier found Leishman-bodies in the mucosæ of several of Escomel's patients.

The description given by Migone agrees with Escomel's.

The mucous phase begins, in many patients, eight or nine months after the cutaneous phase; the cutaneous ulcerations are often healed when the physician is first called in to see the patient; but the characteristic scars are found, usually on the legs or arms.

The nasal mucosa, which is usually the first to be attacked, is red and infiltrated, and is the seat of sero-purulent catarrh; yellowish crusts form on the nasal system, which ulcerates and becomes perforated; nasal respiration is difficult.

The infiltration gradually extends, the velum palati becomes red, the uvula thickened; the tonsils, pillars of the fauces, and

the pharynx become involved, which renders deglutition difficult and painful.

The patient coughs; the voice is husky, showing that the larynx is involved.

Then the nasal septum is destroyed, the nose sinks in; the upper lip is red, thickened, œdematous. The disfigured face is hideous.

In the last stage, the buccal mucosa is transformed into a thick, granular tissue; the velum palati, the uvula, the tonsils are mingled together in a mass of friable lardaceous tissue; sometimes the faucial isthmus is almost obliterated; the patient breathes and swallows with difficulty; the voice is almost extinct. The disease does not invade the bones or the tongue.

The duration is always long. The patients recover with more or less disfigurement, or else they succumb either to consumption or to some complication, such as bronchitis.

Pathological Anatomy.

A—CUTANEOUS ULCERS.—Nattan-Larrier, Touin and Heckenroth, who examined histological sections of a cutaneous ulcer (*pian-bois, forest-yaws*) of French Guiana, give the following description of the lesion: A granuloma consisting of lymphocytes and mononuclears infiltrating the elements of the derma, abundant giant-cells, never forming the center of a leucocytic follicle with a central necrosis, such as we find in tubercles. Rich vascular network; arterioles and venules often the seat of a vegetative endovascularitis. Leishman-bodies not very numerous, lying free in the œdema-serum or enclosed in the connective-tissue cells, more rarely in the mononuclears; it is at the center of the granuloma that the parasites are most numerous. The authors conclude that these alterations differ sensibly from those of Oriental sore.

Laveran and Nattan-Larrier, who examined smears made by Dr. Escomel from the scrapings or from the exudate of cutaneous ulcers of patients suffering from espundia, found Leishman-bodies in greater or less numbers. The following examinations refer to a patient who had an ulcer on the ear (initial lesions), and several cutaneous ulcers on different parts of the body, and ulcerations of the naso-bucco-pharyngeal mucosa:

"Ear-lesion—This smear, containing many red blood corpuscles, contains numerous polynuclear leucocytes, large and medium mono-

nuclears, fibrin-filaments, few bacteria. The Leishman bodies occur either in a free state or enclosed in the macrophages. In both forms the bodies have distinct contours and stain well. Their form is more often round than oval; their maximum diameter is 3 or 4 microns. The nucleus is flattened, and lies close to the cell-wall; it measures from 1½ to 2 microns in length, and 3-10 to ½ micron in width. The centrosome occupies a variable position in relation to the nucleus; it is quite often in contact with it. The centrosome is usually rod-shaped, more rarely cocciform.

"Nasal lesion—The smear is poor in red blood-corpuscles; it consists of mucus and serum in which mononuclears are abundant (macrophages, large and medium mononuclears); bacteria, cocci and bacilli form thick masses here and there; fibrin-filaments are rare. Whether contained in the white or red blood-corpuscles, the Leishman bodies present almost invariably the characters we have described in connection with smears from the ears."

It is easier to demonstrate the Leishman-bodies in smears than in sections, provided that the scrapings from the floor of the ulcer be examined, and not merely the pus.

Franchini, who studied the alterations of cutaneous leishmaniosis in a patient who had contracted the disease in Brazil, gives a description which differs a little from the foregoing. The changes are not the same at the beginning, in the period of stasis, and at the end of the ulcer. It is not surprising that there is not perfect accord among the descriptions of different authors. According to Franchini, the Leishman-bodies are well seen in sections stained with toluidine or iron-hematoxylon, after fixation in sublimate-solution or Schaudinn's liquid. The parasites, few in number, are either free or endocellular, and are found near the surface as well as deeper down. Leishman-bodies have been found in the scrapings from the ulcerations and in the serosity from the suppurating granuloma.

Migone, in Paraguay, practised biopsia of several incipient and old granulomas. In the initial period, the œdematous derma is infiltrated with mono- and polynuclears. The Malpighian papillæ penetrate the derma. Little by little the infiltration becomes thicker, and an inflammatory nodule is started.

The epidermis is destroyed and an ulcer forms.

The blood and lymph capillaries are attacked by the inflammation, and the endothelial cells sometimes contain *Leishmania.*

According to Mariani, the anatomical alterations of American leishmaniosis are identical with those of Oriental sore. The pro-

cessus is the same: alterations at the primary dermal sore consisting in an intense vascular and fibro-plastic reaction, with accumulation of infiltrating elements. Lymphocytes, large mononuclears, endothelial cells, and giant-cells constitute the essential elements of the infiltration, in varying proportions according to the stage of the ulceration. The epidermis reacts at first by more or less hyperplasia; then ensues a period of involution and ulceration. The hypodermis is constantly involved. Cure takes place by a substitution of a young connective-tissue for the degenerated tissues.

B—ULCERATIONS OF THE MUCOSAE.—According to Escomel, the mucous lesion consists of a granuloma of embryonal cells with the trabeculæ of connective-tissue and blood-vessels. There are no giant-cells, nor arteritis, nor foci of softening.

In 1912, Dr. Escomel sent me a piece of mucosa of the palatine vault, removed with the galvano-cautery from a case of espundia of fifteen years' standing; the following gives the results of the examination by Nattan-Larrier and myself:

"The lesion consists essentially of a diffuse leucocytic infiltration of the corium of the mucosa, with distension of the blood and lymph capillaries, and disappearance of the epithelial layer, which was replaced by a fibrino-leucocytic false membrane.

"The infiltration of the corium extends through its entire thickness; more marked in certain regions than in others, it never shows a nodular disposition, and does not possess a systematic distribution with regard to the vessels or the glands. The afflux of leucocytes is not more marked in the superficial layers than in the deeper ones, and is equally the same at the center of the lesion as at the edges. The elements thus distributed are mononuclears of medium size, with a round central nucleus, and rich in chromatin, surrounded by a regular protoplasmic border, apparently normal; besides these mononuclears, in various proportions, but always numerous, there are plasmazellen, recognizable by the character of their nuclei and the reaction of their protoplasm; finally, here and there, macrophages are seen; these cells, more numerous at the edges of the lesion, never form confluent masses, and do not possess dimensions as great as the elements of the same type observed in sections of Oriental sore. The polynuclears are rare in the deeper layers of the infiltrated zone; they are scarcely seen at all except at the surface of the corium or in the neighborhood of the ulcerations. The stroma of the granuloma is formed of a disorganized connective-tissue, the fibrillæ of which, feebly stainable, occur in thin sinuous bands between the leucocytic elements; the connective tissue cells are numerous, voluminous, and their nuclei, which stain well, are

always easy of identification. The blood-capillaries, in the superficial region of the corium and in its deep part are much distended; their lumina, bounded by swollen endothelium, are filled with red blood-corpuscles mixed with a considerable number of polynuclear leucocytes. In the middle zone of the lesion, the blood vessels, crushed in by the surrounding leucocytic infiltration, show only a narrow lumen. It is always easy to distinguish the lymphatic vessels, for they are found throughout the lesion at the surface as well as in the deeper part.

"The ulcerative process can easily be understood. The epithelial layer, resting upon the infiltrated and swollen corium, becomes distended and thinned. The cells of the basic layer lose their distribution in palisades, and are dissociated by the afflux of polynuclear leucocytes. The epithelial cells break down in vacuoles and necrose; in the intercellular spaces and in the lacunæ polynuclears accumulate, sometimes forming conglomerate heaps. The epithelium soon becomes represented only by branching cells intercalated between the white blood-corpuscles, and by a thin superficial layer, the elongated, heaped-up, lamellated, and faintly colorable elements of which end by disappearing altogether. The surface of the ulceration is then formed by a fibrinous network, composed of fibrillæ and cut-out blocks, in which are enclosed altered polynuclears, some mononuclears, and a small number of red corpuscles. The false membrane thus formed is full of bacteria.

"Histological sections show only a small number of **Leishmania**; they are found almost exclusively in the superficial and middle parts of the thickened corium, at the edges of the ulceration. The majority of the invaded cells are medium-sized mononuclears. Often they contain only one or two **Leishmania**; exceptionally they contain more than six. At some points, the parasites seem to be lodged in the protoplasm of a swollen connective-tissue cell. The polynuclear leucocytes are rarely attacked by the parasites; notwithstanding this, we have found elements of this type in the lumen of lymphatics, and in the spaces between the epithelial cells. We have never seen **Leishmania** in the false membrane."

On the other hand, the examination of smears made from ulcerations in the throat of another patient of Dr. Escomel, likewise suffering from espundia, gave us the following results:

"In the spaces between the fibrin-filaments there are still finer threads, red blood-corpuscles, frayed-out nuclei of disintegrated leucocytes, rare macrophages and intact polynuclears; finally, thick masses of bacteria of all kinds. Free **Leishmania** are rare; they are situated on the fibrin-filaments, or in the neighborhood of the altered nuclei. The invaded cells are macrophages, and rarely polynuclear leucocytes; the **Leishmania** are there either single or multiple, never, however, exceeding four in number. The intracellular **Leishmania** are often of unequal dimensions, alongside of elements four micra in diameter or more, we find others not more than two

and a half micra. Their form is always round, and their outlines clear. **Leishmania** possessing a rounded or oval nucleus are not rare. We have often seen, both in the free state and as inclusions in the leucocytes, multiplication-forms presenting a rounded form, having a diameter of 7½ to 8 micra, and showing, close to the cell-wall, two, or even three, cup-shaped nuclei."

The older mucous lesions are characterized, according to Migone, by a diffuse and abundant infiltration; the corium has almost disappeared, and there remain only a few scattered islands of epithelium; the newly-formed blood-vessels and lymphaties exist in greater or less number.

The search for *Leishmania* in old lesions is often difficult.

Leishmania are not found in the blood of the patients (Migone), and it is doubtful if cutaneous and mucous leishmaniosis can become complicated with internal leishmaniosis. Only one case of kala-azar has been observed in South America. The patient was an Italian of 47 years, who seemed to have contracted the disease in 1910, when he worked on the railroad from Sao Paulo to Corumba, in Matto Grosso; that is to say, in a region where leishmaniosis is endemic; Migone, who treated the patient in Asuncion (Paraguay), found a few Leishmania in the blood, and many more in material drawn by puncture from the liver and spleen. The patient did not present any cutaneous lesion; the *Leishmania* were a little larger than those of bouba. The interpretation of this unique case is difficult; in any event, the attention of the physicians of South America should be directed to the possibility of finding cases of internal leishmaniosis in regions where cutaneous and mucous leishmaniosis is endemic.

PATHOGENIC AGENT.—The *Leishmania* which is the causative agent in American leishmaniosis shows a great morphological resemblance to the *Leishmania tropica* of Oriental boil (*bouton*); like the latter, it is found in the tissues either free or, more frequently, as inclusions in the anatomical elements; the dimensions of the two parasites are nearly the same; both show, alongside the nucleus properly so called, a secondary rod-shaped nucleus or centrosome; both develop flagella in appropriate culture-media.

Some observers have noticed slight differences between *Leishmania americana* and *L. tropica*.

Laveran and Nattan-Larrier have called attention to a peculiarity presented by the Leshmanias found by them in the lesions of espundia. The nuclei, instead of being round or oval, as is

usually the case in *L. tropica*, were elongated and as though flattened along the cell-wall. Subsequent researches have shown this disposition of the nuclei is neither constant in the *Leishmania americana,* nor confined to this parasite.

Wenyon has found, among the Leishmanias of Bagdad sore, flattened elements, joined to the cell-wall, apparently identical with those seen by Laveran and Nattan-Larrier in espundia.

Splendore notes that the protoplasm of the Leishmanias of bouba are more deeply stained with the Giemsa than that of *L. tropica,* and that, in cultures of the former parasites, we find longer forms than in cultures of other Leishmanias, that of the flagella sometimes reaching 40 to 50 micra; he concludes from his researches that the Leishmania in question constitutes a new variety.

Wenyon has obtained with *Leishmania americana* cultures morphologically identical with those of *L. tropica,* but of a more rapid growth.

Franchini found, in his case of American leishmaniosis, alongside of Leishmanias having the usual dimensions of *L. tropica,* some larger forms attaining a length of 5 or 6 micra; and, in cultures, he has seen parasites from 10 to 15 micra in length, and from 1½ to 2½ micra in width, the flagella of which reached a length of 40 micra.

G. Vianna found, in an ulcer of a patient from Minas Geraes (Brazil), Leishmanias which showed, when stained by Romanowsky's method, a red filament athwart the median portion, not projecting beyond the enveloping membrane; Vianna proposed to give to this Leishmania, which he regarded as a new species, the name *L. braziliensis.* The filament noted by Vianna seems to correspond to the rhizoplast already observed by different authors.

Escomel has observed Leishmanias with short flagella in cutaneous ulcers contracted in Peru.

Rebagliata believes that he has seen, in sections of the ulcers of uta, flagellated forms similar to those in cultures, along with normal Leishmanias.

La Cava has found flagellated elements in patients suffering from Oriental sore complicated with ulcerations of the mucosæ, contracted in Italy. The presence of flagellated elements, which is very rare, in the ulcerations of patients suffering from Ameri-

can leishmaniosis cannot, therefore, be regarded as a peculiar characteristic of the Leishmania which is the cause of this disease.

From a morphological point of view, we may say that there are no characteristics that would enable us to differentiate at once between *Leishmania americana* and *L. tropica*; but this does not prove that the two are identical; the *Leishmania Donovani* has the same morphological characters as the *L. tropica,* but it is recognized that we are dealing with two distinct species, because the biological characters of the two parasites are very different, the first giving rise to kala-azar, the second to Oriental sore. It is by basing ourselves on the pathogenic action of the parasite, on the symptoms and the anatomical lesions, particularly those of the naso-bucco-pharyngeal mucosa, that we (Nattan-Larrier and Laveran) have proposed to make, not a distinct species, but a variety of the *Leishmania* of Oriental sore, under the names of *L. tropica* var. *americana.*

Several microbian associations have been noted.

Seidelin found, in two patients suffering from Yucatan ulcer, a diplococcus which was the only bacterium he found associated with the *Leishmania.* This diplococcus, either free or enclosed in the polynuclears, resembles the gonococcus, but it is stained by the Gram. Seidelin thinks it might play a pathogenic rôle.

In a case of cutaneous American leishmaniosis, McEwen also found a diplococcus, like the gonococcus, accompanying the Leishmania.

Wenyon found a similar diplococcus in Bagdad sore.

In smears from an espundia-ulcer of the mucosæ, Nattan-Larrier and I have found amebæ; in the preparations sent by Dr. Escomel there were no *Blastomyces.*

The mixed infections in American leishmaniosis should be studied carefully, since they might explain the differences in clinical phenomena that distinguish this disease from ordinary Oriental sore. It is known that the ulcer of hot countries is the production of these associations.

AMERICAN LEISHMANIOSIS IN ANIMALS.—The cases of natural infection of dogs by *Leishmania americana* are very rare.

In 1912, Pedroso observed, in northern Brazil, two dogs that had ulcerations of the nasal mucosa. One of the dogs had been found in a village where there was only one case of leishmaniosis

in man; this patient had ulcers of the nose and throat of five years' standing. The dog was in bad condition; he had cutaneous ulcerations besides the lesion of the left nostril; smears made from scrapings from the nasal ulcer showed numerous Leishman-bodies identical with those from the human subject. The master of the other dog had an ulcer of the foot that was diagnosed as Leishmaniosis, and he made the dog lick his ulcer; the animal thereby became directly infected, but it is to be noted that a histological examination of the nasal lesion of the dog was not made; the diagnosis rested on the macroscopic appearance of the ulceration, and the history of the case.

G. Vianna, who examined a section of the skin of the nose of Pedroso's first dog, said that he found Leishman-bodies among the unstriped muscular fibres of an arteriole; according to him, the *Leishmania brazilicnsis* is a near neighbor to the *Schizotrypanum Cruzi.*

I have sometimes seen *L. tropica* heaped up in the fusiform cells of the connective-tissue, which might easily be mistaken for unstriped muscular fibres.

Migone has examined the cutaneous lesions of hunting-dogs of laborers working in the regions where leishmaniosis is endemic, but he has never found any *Leishmania* in these animals.

Brumpt and Pedroso saw, in a region in Brazil where leishmaniosis is endemic, five cases of ulcers in dogs, but they did not find any Leishmania in these ulcers; the dogs of the forest-workers are fierce and difficult.

Wenyon successfully inoculated a dog with virus taken directly from a man; a young dog, inoculated intravenously, was not infected. Migone has inoculated dogs unsuccessfully.

Wenyon obtained two nodules in a cat inoculated with material taken from a man. Migone failed in his attempts to inoculate cats.

F. Sant'Anna successfully inoculated two cercopitheci with virus from a patient affected with leishmaniosis of Brazilian origin; the inoculations were made in the supra-orbital region. A monkey, inoculated on the edge of the nostril with virus from one of the cercopitheci, was likewise infected.

Wenyon also infected a baboon. A *Cebus libidinosus* inoculated by Migone was not infected.

Wenyon failed in his attempts to inoculate hares and mice.

MODES OF PROPAGATION OF AMERICAN LEISHMANIOSIS.—It is the generally accepted opinion in America that ulcerative leishmaniosis develops after the bites of insects. Many patients can even give the date when they were bitten, the divergence being when they are asked to identify the infecting insect. Besides, it can be readily understood that, in the hot and moist atmosphere of the virgin forests where leishmaniosis rages, and where blood-sucking insects abound, the patient would have some trouble in designating the particular insect that inoculated him; and that he would be most likely to incriminate, in each locality, the insects or acarians that are most in evidence, or which inflict the most painful bites.

It thus comes about that mosquitos, simulia, various puncturing flies, and, above all, the ixodes, have all in turn been accused of being the propagating agent in this disease.

In the Panama Canal Zone, the natives accuse a fly called *mosca boyana* of being the cause of the ulcers; this fly is found only on the broad yellow flowers of the boyano, which is a jungle-plant.

Franchini's patients, who had contracted ulcerating leishmaniosis in Brazil, believed that a fly of a yellowish color, called *cotunga* by the natives, had made the punctures from which the ulcers afterwards developed.

A. da Matta, in Manaos (State of Amazonas), suspects that the *Dermacentor electus* is the propagator of the ulcers.

Flu, of Surimam, also incriminates the ixodes.

In Paraguay, of the laborers who contracted the disease in the forest, some blame the very painful bites of the simulia, which they call *mbariguies,* others blame the bites of ixodes, *Amblyomma striatum, A. fossum, A. cajanense* (Migone, Lindsay).

Brumpt and Pedroso, after passing on review the various insects or acarians that might be suspected of transmitting American leishmaniosis, reach the conclusion that the tabanides are the most suspected of all insects; they remark that the gad-flies (*taons*), a diurnal insect, attack by preference the face and exposed parts of the extremities, which corresponds with what we know concerning the usual localization of the ulcers; moreover, the gad-flies do not wander afar, which agrees with the fact that the foci of leishmaniosis are very localized; the localities close to ponds are those in which the disease is most often contracted,

and those also in which gad-flies abound. The *stemoxys,* which might also be incriminated, is much rarer in the forests than in the pastures, where ulcerative leishmaniosis is never contracted.

In the valley of Convencion, Peru, the inhabitants accuse a simulium as the carrier of the disease (Migone).

To sum up: The rôle of insects or acarians in the propagation of American leishmaniosis, as in that of Oriental sore, is very probable, seeing that we are almost always dealing with dermatoses, localized primarily, at least, in the exposed parts of the body, but it has not been possible, up to the present, to distinguish, among the multitude of biting tropical insects, the one that is the veritable agent in the transmission of the disease.

It is possible that several species of biting insects are capable of transmitting leishmaniosis. Migone relates that he had occasion to treat patients whose ulcers had developed after bites from a simulium or a mosquito, or on small abrasions of the skin, as if the germ had been on the surface of the skin, and only awaited a solution of continuity in order to penetrate. I made similar remarks concerning Biskra boil. It is possible that the biting insects or acarians merely serve to open a door of entrance to the microbes without actually conveying them; this rôle (of carrier) could be performed by ordinary flies which, by not making punctures, are never accused by the patients of being propagators of the disease.

There can be no doubt that American leishmaniosis is inoculable from man to man, and is transmissible.

More than once, the disease has developed in a woodyard of the forests of Brazil, Peru or Paraguay after the arrival of a laborer affected with the ulcers.

Auto-inoculation, by scratching or otherwise, is not rare. Seidelin reports the case of a patient with an ulcer of the right ear who, while lying down, used to rest his head on the right forearm, contracted an ulcer on the latter.

We have already seen how two dogs were probably contaminated by their masters.

Leishman-bodies are found in the sero-purulent liquid in the base of the ulcers, and we know with what avidity, in hot countries, house-flies suck the exudate of wounds; after having become soiled on the ulcers, it is evident that the flies can easily transport to an abrasion of the skin of a healthy man the patho-

genic microbes which adhere to the proboscis or feet of the fly.

Man can all the better serve as a source of supply for the virus, since the ulcers often last for years.

It may well be asked if some of the lower animals could not serve in a similar capacity.

According to the Brazilian hunters, wild animals never have ulcers like those in man. Only Brumpt and Pedroso have remarked the existence of ulcers in two agoutis; in one of these animals, the ulcers had been invaded by the larvæ of flies.

Among the domestic animals, dogs only seem to act as a reservoir for the virus, and cutaneous leishmaniosis is very rare among them.

The natural host of the bouba-virus, according to the peons of Paraguay, is the rattlesnake. When one finds one of these serpents coiled up in the forest, there is generally a cloud of simulides hovering above it; and, if the serpent be killed, the *Amblyomma striatum* is found to adhere to it at various points. The simulides or the ixodes, having sucked the blood of the snake, transmit the microbe of the disease to man. This popular opinion has no scientific basis, but it is worth mentioning; a lizard, the gecko, has been suspected of being the reservoir of the virus of Oriental sore.

Finally, it may be supposed that, in certain conditions of environment, the flagellata which naturally live in insects or acarians become virulent in man. Franchini and I have demonstrated that mammals can be infected with the flagellates of fleas and mosquitos, and that, in experimental animals, one finds parasitic organisms having a close resemblance to Leishman-bodies. It still remains to investigate the flagellates of simulides and phlebotomi, which abound in the regions where cutaneous leishmaniosis is endemic.

DIAGNOSIS.

Leishmaniosis of the skin and mucous membranes was for a long time confounded with other diseases, particularly syphilis and leprosy; nowadays, we possess an easy and certain means of diagnosis in the search for the pathogenic agent; and inasmuch as, in the final analysis, it is to this search that we must have recourse, I will not dwell very long on the clinical characteristics, which of themselves enable us to make a diagnosis.

We have already seen that Leishmania is existent in variable ways in the boils and cutaneous ulcers and the altered mucosæ; the Leishmanias are numerous in recent lesions, rare or very rare in old ulcerations; they are often found in the exudate of the ulcerations; it is thus usually very easy to detect them. If the exudate be decidedly purulent, it is rejected, because Leishman-bodies are rarely found in pus in good condition, and we make smears with material scraped from the floors or edges of the ulcers. Leishman-bodies are more difficult to find in sections than in smears.

The dried smears are fixed in alcohol-ether, and stained by Romanowsky's method. The Leishmanias stain easily, and are quickly recognized in the midst of anatomical elements, thanks to their form, generally ovoidal, and to their characteristic nuclei.

American leishmaniosis, even when confined to the skin, is distinguished from Oriental sore by the more sluggish nature of the ulcerations, longer duration, and more difficult cure; above all, it is distinguished by its tendency to become localized in the naso-bucco-pharyngeal mucosa, causing disintegrations that are never observed in Oriental sore.

Some cases of leishmanian ulcerations have been reported in subjects who had contracted the disease in other countries besides South American; we shall see that these cases differ notably from naso-bucco-pharyngeal American leishmaniosis.

Cardamatis and Melissides report the case of a young man who had 35 Oriental sores (*boutons*), 24 of which were on the face, and two of the latter on the upper lip.

F. La Cava and Pulvirento observed four cases of invasion of mucosæ of the nose and lips in Italy. In one patient, the sores developed at the angles of the mouth, and the ulceration had gained the mucosa of the upper lip; in another, the sore developed at the orifice of the right nostril. In neither of these cases had the lesions the rapid course nor the gravity which they present in American leishmaniosis.

Christopherson observed in one of the natives of the Anglo-Egyptian Soudan a disease closely resembling espundia. The papule (*bouton*) began, in this patient, on the upper lip, which was swollen and sagging. At the inner part of the wings of the nose there were ulcers covered with crusts; the septal cartilage

had been partly destroyed. The ulceration had also reached the mucosa of the upper lip, close to the frenum and the neighboring gum. Scrapings from the ulcerations contained a small number of Leishman-bodies.

In all these cases, we have to deal with Oriental sores that developed on the lips or nostrils, and which afterwards extended to the neighboring mucosa of the mouth or nose, which is not the usual course in American leishmaniosis; furthermore, the slow and progressive evolution, lasting about ten or fifteen years, of this latter affection which can end fatally, is not comparable to the relatively rapid course of Oriental sore, which always ends in cure.

Castellani and Chalmers describe, under the name of "Indian oro-pharyngeal leishmaniasis," a disease which is close akin to American leishmaniosis. These authors observed, in two Europeans who had lived a long time, ulcerations of the posterior wall of the pharynx and the velum palati; there was no history of syphilis, and, in one case, Leishman-bodies were found in the ulcerations. As Castellani and Chalmers justly remark, these cases differ from espundia in not having any cutaneous lesions.

Blastomycosis, which is quite common in certain regions of South America, and notably in Brazil, Peru and Bolivia, has been confused until recent times with American leishmaniosis under the names of bouba or espundia; it has been well described by Lutz, Splendore, Carini and Escomel.

Blastomycosis generally begins at the mouth, contrary to leishmaniosis, which first shows cutaneous lesions; it rarely invades the nasal mucosa, and the alterations it causes in the buccal mucous membrance differ notably from those produced by leishmaniosis.

According to Splendore, blastomycosis is characterized by a callous infiltration of the buccal mucosa which invades the lips, the base and edges of the tongue, or by pseudo-tuberculous papules on the uvula and pillars of the fauces, or else by isolated or confluent papillomatous vegetations on the mucosa of the cheeks and gums, resembling condylomata. On the surface of the body, the skin presents sluggish, warty-looking ulcers, ordinarily small in size and few in number. The corresponding lymphatic glands are engorged. The patients complain of pain in the mouth which renders alimentation difficult; they are tormented

by copious and incessant salivation. In serious cases, there is hectic fever, prostration, respiratory troubles (cough, bronchial catarrh, with sputum streaked with blood), and alterations of the voice even to the point of aphonia.

The examination of smears made with the scrapings from ulcers reveals the presence of *Blastomycetes,* which are easy to distinguish from Leishman-bodies. The fungus which, in the lesions of the skin or mucous membranes, appears as a yeast-plant, assumes a filamentous form in cultures. Splendore calls it *Zymonema braziliense.*

From the standpoint of treatment, it is necessary to make a correct and early diagnosis, since the remedies that are useful in leishmaniosis of the skin and mucous membranes are of no avail in blastomycosis; in the latter affection, iodids give the best results.

Framboesia tropica, which is often designated *pian* in the French colonies, was for a long time confused in Venezuela and other American countries, under the name of *buba,* with American leishmaniosis and other ulcerative diseases. This disease, which is clearly characterized by a granulomatous and raspberry-like cutaneous ulceration, and caused by a treponema (*Treponema pertenue* (Castellani), is easy to distinguish from American leishmaniosis; the mucous membranes are not attacked.

Verrugu peruana (Peruvian wart) is confined to certain regions of the Andes at an altitude of from 3,000 to 10,000 feet. The disease, of unknown nature, is characterized by an irregular fever, accompanied by rheumatic pains, anemia, and a granulomatous ulceration of the skin and mucous membranes. This eruption cannot be confused with the ulcers of leishmaniosis.

Castellani and Chalmers have described, under the name of *gangosa* (*rhinopharyngitis mutilans* of Leys), an ulcerative disease of the mucosæ of the palate, nose, pharynx and skin, which destroys the cartilages and bones, causing grave deformities. Gangosa, the cause of which is unknown, has been observed in the Mariana Islands, in British New Guinea, and the Caroline Islands. The slow march of the ulcerations of the mucosæ, which may last from ten to thirty-five years, recalls that of American leishmaniosis, but there are no cutaneous localizations, and no Leishman-bodies are found; neither are any Hansen's bacilli

(leprosy) found, nor treponema, and anti-syphilitic treatment has no effect.

PROGNOSIS.

When it is confined to the skin, American leishmaniosis constitutes a more or less disagreeable, transitory disease, according to the number, extent, and localization of the ulcers, but it always ends in cure, though leaving, it is true, indelible scars, which are particularly unpleasant when situated on the face, besides some disfigurements, such as partial destruction of the external ear, deformity of the nose or lips.

When the disease invades the mucous membranes, the prognosis is much more gloomy. The patient becomes an object of loathing to those around him, both on account of his appearance as well as the fetor which he gives off. The continual salivation which results from the alterations of the buccal mucous membrane is very annoying to the patient, and is very unclean; mastication and deglutition become progressively more painful and difficult, and this leads to emaciation; respiration itself becomes embarrassed, when the inflammation reaches the larynx.

Complications sometimes cause death at this advanced stage of the disease.

When the mucous membranes become involved, Escomel says, nothing stops the course of the disease; we must be content to destroy, with the galvano-cautery, as much of the ulcerated mucosæ as possible, in order to give some relief to the sufferers, but relapses are inevitable.

The progress of therapeutics has modified, as we shall see, the hopeless prognosis of Escomel.

TREATMENT.

Ablation of the primitive cutaneous ulcer and deep cauterizations constituted, until recently, the principal treatment of American leishmaniosis. It was admitted that, in order to escape the naso-bucco-pharyngeal accidents, it was necessary to remove with the scalpel the primitive cancrous lesion, by encroaching freely upon the neighboring healthy tissues, or else to destroy the diseased tissues with the hot iron or a saturated solution of carbolic acid in alcohol.

Complete destruction of the initial ulcer by the thermo-cautery seems to prevent, according to Lindsay, the secondary naso-

bucco-pharyngeal lesions.

When the mucosæ were invaded, it was still deep thermo-cauterization that was resorted to; but only temporary amelioration was obtained, which can be understood when we recall that the cauterizations did not reach the Leishman-bodies in the deeper tissues, particularly in the anfractuosities of the nasal passages. Moreover, the deep cauterizations gave rise to the formation of retractile fibrous cicatrices, which were sometimes very annoying.

It was evident that cauterization was but an imperfect treatment when the leishmaniosis had reached the mucosæ, and that a medication capable of arresting the course of the disease was to be desired.

According to Migone, hectine, salvarsan, and soamin give slow improvement without causing the Leishman-bodies to disappear; and it is indispensable to resort to the actual cautery (three or four applications) in order to bring about a definite cure.

Neosalvarsan intravenously, according to Almenara, happily modifies the ulcerative lesions due to leishmaniosis; as a treatment for the cutaneous ulcers, the same author recommends moist antiseptic applications; he says that deep cauterizations and excisions leave grave deformities.

According to Monge, the cutaneous lesions are amenable to neosalvarsan.

The use of tartar emetic by intravenous injection, at first recommended by Vianna of Brazil, and afterwards by different observers, seems to constitute a great advance in the therapeusis of American leishmaniosis. G. Vianna, Machado, O. d'Utra e Silva, Terra, P. da Silva, Carini, Lapa have mentioned instances of cures of American leishmaniosis of the skin or mucous membranes which leave little doubt as to the efficacy of this form of treatment, which had already been successfully used in the trypanosomiases.

The Brazilian method consisted in employing tartar emetic in a one per cent. solution in normal saline solution; this is filtered by the Berkefeld method, and five cubic centimeters are injected daily for five consecutive days in a vein at the bend of the elbow.

Carini advises the injection of from five to ten c. c. of the solution into a vein every day or second day according to the tolerance of the individual. The number of injections in one of his

cases was twenty-seven, and in others, forty.

The solution of tartar emetic, which is caustic, causes severe pains when it is injected into the connective-tissue instead of the vein; before emptying the syringe, it is necessary to be certain that the canula has entered the vein. In order to avoid the attacks which the injections sometimes cause, it is advisable to inject the liquid very slowly.

The ulcerations of the mucous membranes are more obstinate than those of the skin, and require a more prolonged treatment.

One of Carini's patients had an ulcer on the forehead and three granulomata (*boutons*) on the face which contained numerous Leishman-bodies; after twelve injections, the ulcer on the forehead had cicatrized, and no more *Leishmania* were found in the granulomata. Tartar emetic thus possesses a specific action on the *Leishmania americana*. It would be interesting to ascertain if it acts similarly in other leishmanioses.

In one patient of A. Lapa, the nasal mucosa was attacked. Tartar emetic was administered every second day, beginning with a dose of three centigrams; after the sixth injection, the patient was nearly well, and in three weeks cicatrization was complete.

PROPHYLAXIS.—We are not well acquainted with the conditions in which American leishmaniosis is propagated, and it is difficult, therefore, to lay down precise rules for prophylaxis.

In Paraguay, the peons smear their arms and legs with chicken-fat in order to escape the bites of simulia and the resultant ulcers (Lindsay). This practise has the advantage of keeping the skin in good condition whenever the bites of insects, and the inevitable scratching, open the doors of entry to the Leishman-bodies.

For the same reason, in order mechanically to guard against the bites of insects, all the doors and windows of a building should be screened with wire-screen, or, at the very least, mosquito-bars should be used at night. Moreover, this is a measure of practical sanitation that is necessary in every malarious district.

A man suffering from ulcerative leishmaniosis of the skin or mucous membranes constitutes a reservoir of dangerous virus, and he should be isolated in localities where leishmaniosis is endemic. The cutaneous ulcers should not be allowed to remain uncovered; by means of suitable antiseptic dressings, they should be shielded from house-flies, the rôle of which is no longer doubt-

ful in the transmission of leishmaniosis. When we have to deal merely with granulomata (*boutons*) of the face, we should encourage the formation of crusts, by means of iodoform, for example, which drives away the flies.

When patients present themselves, with large, or multiple ulcers, or with invaded mucosæ, they should at once be treated with intravenous injections of tartar emetic.

Sick dogs with ulcerations on the surface of the body should be killed at once, and the corpses burned.

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THE NATIONAL CARE OF LEPROSY.

During the past twenty years several attempts have been made to create enough interest in the National Congress to bring about some national provision for the care of leprosy. All of these failed. Now a comprehensive bill (S. 4086) is in the hands of the Committee on Public Health and National Quarantine, after having been favorably acted upon by the House of Representatives. The bill provided a plan for acquiring a site, a method of operation under the U. S. Public Health Service, and the sum of $250,000 to make these effective.

The growing number of lepers in the United States and the absence of any provision in most states, together with the large

number of immigrant lepers, bespeak consideration of such a plan.

The successful results following segregation in the Philippines, Hawaii, Norway and other leprosy centers argues this as the proper method for the control of this disease. Moreover, the only grouped cures have come about in such colonies, where a continuous method can be employed under scientific direction.

The issue is one of national importance and the outcome of the Senate's action will be awaited with interest.

RECIPROCITY WITH TEXAS.

It is with great satisfaction that the JOURNAL announces that reciprocity has been established between Louisiana and Texas. The welcome information is conveyed by the very efficient secretary of the Louisiana Board, Dr. E. L. Leckert, who also testifies that the energetic efforts of the secretary of the Texas Board, Dr. M. P. McElhannon, contributed largely to the removal of the final objections and the crowning with success the efforts, inaugurated since 1911, for a proper reciprocal action between the two neighboring and otherwise closely associated states.

The main conditions for a physician wishing to be licensed through reciprocity are that the applicant must appear in person before the proper official of the State in which he seeks a reciprocal license; he must have practised medicine at least one year in the other State; he must possess a certificate from either State, granted after an examination in which he obtained an average grade of not less than seventy-five per cent; he must be the legal possessor of a diploma from a college of medicine considered in good standing by both Boards; he must present, in proper form, evidence that he is in good standing in the profession and in his community.

This addition makes a total of thirty-two states now reciprocating with Louisiana, a fact which speaks volumes for the standing and the energy of the Louisiana State Board of Medical Examiners.

THE FORCHHEIMER CHAIR OF MEDICINE IN CINCINNATI.

It might be sufficient to announce the gratifying news that friends of the University of Cincinnati had contributed $150,000 to establish an endowment fund for a chair of medicine, which had been named after a distinguished clinician and teacher, with the idea of perpetuating his memory in service to medical education. The establishment of the Forchheimer Chair of Medicine, however, is but one phase of a great municipal plan for a medical college, intended to satisfy the best ideals of public service.

The conception of such an undertaking was possible only through the interest of the community and through a resultant response evidenced in actual contribution of funds sufficient to make the plan effective. The Medical College of the University of Cincinnati now represents a progressive institution with a complete hospital plant, embracing all departments and including provisions for infectious diseases and special buildings for tuberculosis. The teaching units of the plan have been postponed until the hospital had been completed.

The whole scheme and its accomplishment have come about in just ten years and the public spirit behind the institution seems to grow stronger with its development. The outlook, therefore, is excellent and the efficiency of the working and teaching forces of the college itself will be assured, for there is no one thing more conducive to accomplishment than the encouragement which comes from that support which supplies the means of maintenance and operation.

The example here noted in Cincinnati may well serve for other communities and the results must commend the foresight of a city and its people who have the intelligence to realize that such investment provides a healthier city and state and better trained men to keep them so.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

On April 4, 5, 6 and 7, 1916, this Association will meet in New Orleans for its seventy-second annual session.

The preliminary program promises a most attractive collection of essays, covering many fields of mental disorders and correlated

phases. All of the meeting is open to persons interested and the unusual opportunity should attract the profession.

The field covered by this Association is full of problems for solution and the contributions promised at the meeting appear to be quite advanced. The whole subject of medicopsychology, leading us to psychiatry, is large *terra incognita* to the rank and file of the medical profession.

Cursory acquaintance with the press outcroppings of Freud's theories and of their antagonists make for a desire to know more of this phase—but this is but one of the divisions of the scope of operation of the Medico-Psychological Association.

The reactionary movement in the attitude towards the insane has completely changed the organization of modern asylums and, except in benighted communities, the groups of insane confined in institutions are more and more cared for as human beings, and as such are colonized and made co-operative.

Much of the present-day practise with the insane has been brought about through the activities of the American Society for Mental Hygiene, the work of which has come in close association with the body which meets in New Orleans in April. This is natural, for the reason that the Mental Hygiene Society stands for reform and the Medico-Psychological Association is largely constituted of those in charge of insane asylums in which the reform has certainly been most needed. The closer relations of the two organizations, then, must work out results satisfactory to both.

It is natural that the occasion of such a meeting should create local interest, and to further this the Louisiana branch of the Mental Hygiene Society proposes convening at the same time.

A final program will be issued in due course, but it is positively announced that the headquarters will be at the Grunewald Hotel, New Orleans, and all who are interested may obtain detailed information from the Secretary, Dr. Henry C. Eyman, at Massillon, Ohio.

Miscellaneous Abstracts

Heredity and Eugenics.—It has been said frequently that each man is the product of his environment, but no environment will make a Shakespeare out of an ordinary man. The kinds of breeding which produce our great men and our feeble-minded men are as widely separated as are the men themselves.

The theory that acquired characters are not inherited originated in a misconception of what an acquired character is, and in an experiment which is absurd on its face. To acquire means to obtain by effort, by exertion, by the performance of work. An acquired character is one obtained by exercising an organ, or by the work performed by the organ. It consists of a physiological change occurring within the organ which is dynamic in character and is called dynamic development. The amount of an acquirement is proportional to the amount of work performed. A mentally active man has a better developed brain at the age of fifty than he had at the age of twenty, and the difference is due to the extra amount of mental work performed.

If an acquirement is to be inherited, the parent must make the acquirement first and get the offspring afterwards, not get the offspring first and make the acquirement afterwards.

Among certain eugenists there is a theory that it is impossible to produce an individual which is superior to anything which previously existed. That is, if some very superior individual exists it is because there was, somewhere in his ancestry, a similar superior individually. This theory amounts to a denial of evolution and a return to the Garden of Eden story with Adam and Eve originally created equal to any individual who has since existed.

It is not clear how widely extended this theory is, but it seems to be back of the proposition to sterilize a large part of the population. That proposition is a public confession, by those who make it, that they know absolutely nothing about what causes improvement and what causes degeneracy. In their despair at seeing no way to improve the race other than that of killing off the inferior, they propose the killing process by indirection.

Let us consider the horse. A century ago there was no horse

in the world capable of trotting a mile in three minutes. Now we have horses which have trotted a mile in two minutes. This is an absolute and very great advance in power made in the past 100 years. It has been said repeatedly that this improvement came about through selection, but the statement is not true and is made in complete ignorance of the facts. Selection has been used abundantly among horses, but that selection is not connected with the improvement which has taken place.

High speed at the trot is not a natural gait for horses. It is an artificial gait which never existed in any breed of horses until forced there by the art of man. Less than a century ago the only high speed gait for horses was the run, and when trotters were forced for speed they would break into a run. Now we have "born trotters" which will stick to the trot no matter how hard they are forced, and trotting speed approaches running speed. Here is a new character in the trotters of to-day.

To have selection a mare must have several foals. If she produces but one foal in her entire life, there can be no selection in her line. It is take that foal or none. Write out the pedigree of any 2:10 trotter, it matters not what one, and extend that pedigree to the time when there was no such thing the world as a 2:30 trotter. In that pedigree there will be from 5 to 20 mares, no one of which ever had more than one foal in her life. The other mares, and the sires in the pedigrees, will be found, on investigation, to have produced less than the normal number of foals. Also, the lines of improvement to our high speed trotters average only seven generations to the century, while the normal number is ten generations. Actual improvement came in those lines in which opportunity for selection was reduced to its lowest limit.

The same thing is true in intellectual power in man. Take any list of intellectually eminent men and you will find that they were sons of men much older than the average age of fathers when sons are born. A few will be found to be sons of comparatively young fathers, but push the investigation in those cases a little further and you will find that, while it is possible to get an eminent man from a young father, it is impossible to get one from a sucession of young parents. A succession of young parents always results in the production of mental inferiority, and, if the

parents are unusually young, in such a succession the product is weak mentally.

To maintain any group of animals on a level in its power capabilities there must be a certain amount of acquirement per generation before reproduction. If the amount of acquirement is decreased there is a decline in power capabilities toward a lower corresponding level. If the acquirement is increased there is a rise toward a higher corresponding level. The age of parents at time of reproducing is one factor in measuring the amount of acquirement, and an investigation which did not consider this factor in at least three generations of ancestors would be superficial. (Casper L. Redfield, in an address before the Eugenics Educational Society, Chicago, December 10, 1915.)

Society Proceedings

THE FOURTH DISTRICT MEDICAL SOCIETY.

Pursuant to a call of Dr. J. E. Knighton, Councilor for the Fourth Congressional District. thirty-three physicians of the Fourth Congressional District of Louisiana assembled at the Academy of Medicine rooms, in Shreveport, February 15, for the purpose of organizing a fourth district medical society.

The meeting was called to order by Dr. Knighton, who nominated Dr. R. M. Penick, president of Shreveport Medical Society, as temporary chairman; Dr. A. A. Herold was nominated as temporary secretary; both chosen unanimously. Dr. Knighton then explained object of meeting and called upon Dr. Vaughn, secretary of the Fifth Congressional District Society, to explain the workings of his organization and to make appropriate suggestions.

On motion, the chairman then appointed Drs. Barrow, of Shreveport; Mosely, of Arcadia, and Edgerton, of Coushatta, as a committee, with Councilor Knighton, to draft constitution and by-laws. The committee retired and, after ten minutes, reported back their draft, which, with a few minor changes, was unanimously adopted.

Permanent organization being then in order, the following officers were elected: President, C. H. Irion, of Benton; first vice-

president, C. E. Edgerton, of Coushatta; second vice-president, J. L. Kimbell, Shreveport; secretary-treasurer, A. A. Herold, Shreveport. The Council, according to constitution, will consist of A. A. Herold, chairman, with the following parish secretaries: Tucker, of Bossier; Garrald, of De Soto; Norman, of Webster; Gahagen, of Red River; Wilkinson, of Claiborne; Mosely, of Bienville, and Walke, of Caddo.

On motion, duly seconded, the society tendered a rising vote of thanks to the visitor, Dr. Vaughn, of Collinston, for his assistance in organizing.

It was decided to have a meeting in Shreveport in March, exact date and program to be left to the Council..

It was also decided that the date of all meetings is to be left to the Council, but the place of each subsequent meeting to be decided at the preceding meeting.

All present were then enrolled as members, viz.: Caddo, R. M. Penick, J. E. Knighton, L. Abramson, F. M. Williams, S. L. Williams, C. F. Rew, J. M. Bodenheimer, J. L. Kimbell, E. A. Welsh, I. M. Callaway, F. G. Ellis, F. B. Waits, C. C. Sims, S. C. Barrow, W. W. Smith, M. S. Picard, Randall Hunt, J. C. Willis, W S. Hunter B. C. Garrett, A. A. Herold, J. A. Hendrick; Bienville, J. M. Moseley, F. F. Wimberly; De Soto, Guy Wimberly; Bossier, D. J. McAnn, G. A. Wise, C. H. Irion, H. P. Crow, R. Butler, C. M. Tucker; Webster, W. McDade; Red River, C. E. Edgerton.

On motion, meeting then adjourned, subject to call of Council.

(Signed) A. A. Herold, *Secretary*.

Medical News Items

It Costs to Be Healthy.—According to a report from the Russell Sage Foundation, the health cost for 227 cities of over 25,000 population in the United States is twenty-two cents per capita.

Disease and War Make Ravages.—The New York Life Insurance Company recently published its 71st annual report and shows that during the past year 409 of its policy-holders were

killed in battle, 448 by accidents in civil life, while 709 died of cancer, 772 of pneumonia and 950 of tuberculosis.

Meeting of Medical Jurists.—The American Association of Medical Jurisprudence will meet in Washington, D. C., May 6, at the New Willard Hotel, under the presidency of Dr. D. Percy Hickling, Washington, D. C. Dr. William A. Woodward is chairman of the committee of arrangements.

The American Medico-Psychological Association will hold its seventy-second annual meeting at the Grunewald Hotel, New Orleans, La., April 4, 5, 6 and 7, 1916. A preliminary program has been furnished which promises material of much interest to the profession. About 450 to 500 of the most capable and distinguished mental and neurological specialists of the United States, of Canada and of the Central and South American Republics will attend this convention.

There will also be held at the same time and in connection with the meeting of the American Medico-Psychological Association the annual meeting of all the affiliated State Societies for Mental Hygiene.

The de Roaldes Prize.—The American Laryngological Association announces that the de Roaldes Prize, a gold medal representing $100, is now open for competition to practitioners in regular standing in the United States and Canada, who are *not* members of the American Laryngological Association. Essays must be typewritten, and the usual methods to prevent the disclosure of the author's name must be observed. All essays must be in the hands of the secretary of the association, Dr. Harmon Smith, 44 West Forty-ninth Street, New York City, prior to April 20.

The American Gynecological Club met in New Orleans, February 11 and 12, 1916. Over twenty surgeons attended the meeting. Clinics were held at the Charity Hospital and Touro Infirmary by the leading gynecologists and surgeons of the city. Several social functions were also arranged for the meeting.

Sultan Rewards German Surgeon.—According to report from Berlin, by way of London, an aide-de-camp of the sultan recently arrived in Berlin bearing a fee of about $30,000 for Dr. Israel, who recently operated on the Turkish Sultan.

Photographs of Physicians.—The *Journal of the A. M. A.* has been in receipt of several letters recently, reporting that a prominent New York "picture service" corporation is asking

physicians to sit for photographs to be used in the *Journal*. The *Journal* states that such requests have not been authorized.

Rural Health Conservation.—A special appropriation of $100,000, for field work of the United States Public Health Service, has been applied for by the Secretary of the Treasury. The object of the service is to conserve the health of the people and the field investigations are not confined to any one section, but are directed along many lines, and have to do with malaria, typhoid fever, tuberculosis, trachoma and many other diseases.

American Medical College Association Elects.—The following officers were elected at the annual meeting of the Association of American Medical Colleges in Chicago, February 8. President, Dr. John L. Heffron, Syracuse, N. Y.; vice-president, Dr. William S. Carter, Galveston, Tex.; secretary-treasurer, Dr. Fred C. Zapffe, Chicago (re-elected); and executive council, Drs. William J. Means, Columbus, Ohio; Isadore Dyer, New Orleans; Samuel W. Lambert, New York City; Charles R. Bardeen, Madison, Wis., and F. C. Waite, Cleveland, Ohio. Beginning January, 1918, two years' college work will be required as an entrance qualification for the colleges of the association, according to a resolution passed by the Association.

Utah Added to Reciprocity List.—Louisiana has added Utah to the list of reciprocating states. There are now thirty-two states with which Louisiana reciprocates.

Frederick Forchheimer Chair of Medicine.—The inauguration of the Frederick Forchheimer Chair of Medicine was celebrated by the University of Cincinnati on January 28, 1916, and Dr. Roger Sylvester Morris was installed as Frederick Forchheimer professor of medicine.

The American Journal of Orthopedic Surgery.—This journal, the only one in the English language devoted to orthopedics, has recently completed its thirteenth volume as a quarterly publication and will henceforth be issued monthly. The first number in the new form began in January, 1916. Dr. Mark H. Rogers, Boston, has been appointed editor by the American Orthopedic Association.

Anti-Spitting Campaign.—Over 1,500 persons were brought into the magistrates' courts of New York City, during the second week of January, for violation of the ordinance forbidding spitting in public places. Nearly all of them were fined from one to

ten dollars. The public health department points out the fact that the chief value of such a campaign lies in its educational effect, and newspaper publicity is a big factor in this phase of the campaign. It would be well for New Orleans to follow in New York's footsteps, for certainly a rigid campaign is needed in this direction.

Mt. Sinai Hospital to Expand.—At a recent meeting of the board of directors of Mt. Sinai Hospital, in New York City, a plan to expand the hospital into a general one was presented. It is announced that $2,150,000 is necessary to make the institution into a general hospital, of which $1,400,000 had already been subscribed or contributed, leaving $750,000 more required. It is not contemplated to expand the hospital indefinitely, but a sufficient development is proposed in order to bring into proper proportion and relation all of the recognized branches of medicine and surgery. The plan will include the construction of new buildings, with equipment, to cost $1,800,000.

Hog Cholera Vaccin Tested.—The Bureau of Animal Industry of the Department of Agriculture recently made exhaustive tests of a vaccin for hog cholera developed by Dr. Charles W. Duval and Dr. M. J. Couret, of New Orleans. Drs. Duval and Couret contend that the vaccin will furnish hogs complete immunity.

Senate Calls Leprosy Experts.—At the suggestion of Senator Ransdell, chairman of the Committee on Public Health, permission was given by the Senate to summon to Washington, at the expense of the government, certain experts on leprosy. Senator Ransdell is planning comprehensive hearings on his bill to provide a national leprosarium. There is not much published information on the subject of the extent and nature of leprosy in the United States, and it is expected that great good will result from the publication of this testimony. Among those summoned were: Drs. M. Bracken, of Minneapolis; Frederick L. Hoffman, Newark, N. J.; M. F. Engman, St. Louis; Howard Fox, New York; Isadore Dyer, of New Orleans, and a number of health officials, including several from the U. S. P. S.

Intern Vacancy U. S. Marine Hospital.—There is a vacancy in the Intern Corps of the U. S. Marine Hospital, New Orleans, La. Applicants for the position must be graduates of

reputable medical colleges. No applicant will be appointed who is married or who is under 22 or over 30 years of age. Quarters, subsistence and laundry are furnished, and the pay amounts to about $25 per month. The appointment is for one year.

Applications should be made to the Medical Officer in charge, U. S. Marine Hospital. New Orleans, La., and two or more letters certifying to the moral character and professional ability of the applicant should accompany the application.

Cigar Cutters Transmit Disease.—It is customary among smokers who use cigar cutters to moisten the tip of the cigar with the lips before cutting it off. This habit is apt to carry much infection with it by transmitting the saliva of persons wetting the cigar to the cigar of the next person using the cutter. The New York Health Department therefore suggests that the moistening of cigars before cutting be dispensed with as unnecessary and that only cutters where only the knife blade comes in contact with the cigar be used. To this end a conference will soon be held with proprietors of retail cigar stores, urging them to use sanitary cigar cutters.

Money to Cleveland Medical Library.—By the will of the late Dr. Dudley Peter Allen, senior professor of surgery in Western Reserve University, $200,000 has been left to the Cleveland Medical Library Association. Interest from the fund is to be paid to the association quarterly, and the trustees of the association expend this interest at their own discretion for the benefit of the library. The principal, however, is to remain in trust perpetually.

Chemical Exports Increase.—As compared with those during 1913, the last year of normal times, the exports of chemicals from the United States during the last year show a tremendous increase. The total value of the chemicals exported in 1915 exceeds $75,000, as against $25,000 in 1913. The increases have occurred principally in acids, bark extracts, dyes and dyestuffs, and soda salts.

American Association of Anatomists.—At the meeting of the American Association of Anatomists held recently in New Haven, Conn., the following officers were elected: President, Dr. Henry H. Donaldson, Wistar Institute; vice-president, Prof. Clarence M. Jackson, University of Minnesota; members of the

executive committee, Prof. Eliot R. Clark, University of Missouri, and Prof. Reuben M. Strong, University of Mississippi. Prof. C. R. Stockard, Cornell Medical School, New York City, was re-elected secretary of the Association.

Memorial of Angelo Celli.—We are in receipt of a notice which has been issued by the Italian Society for the Study of Malaria, in which it is announced that the Society for the Study of Malaria, of which Professor Angelo Celli was the founder and the animating and guiding spirit, has decided to start a subscription for the purpose of erecting in his memory a monument which will perpetuate the record of his accomplishments for all time. It is believed that such a monument should stand on the Roman Campagna, the field of the studies and the object of the most loving care of Angelo Celli; on the spot where he has redeemed man and earth from the scourge of malaria. The Society turns not only to its members, but to the scientists, the physicians, the proprietors and improvers of the soil, to the agriculturists, to the teachers; to all who have admired the profound labors and the innumerable beneficent activities of Angelo Celli. Gifts may be sent to the Treasurer of the Society, Prof. Allessio Nazari, via Agostino Depretis, 92 Roma, or to Dr. W S. Thayer, 406 Cathedral Street, Baltimore.

Relief Fund for the Belgian Profession.—The report of the treasurer, Dr. F. F. Simpson, of the committee of American physicians for the aid of the Belgian profession, shows, for the week ending February 5, 1916, a total disbursement of $7,310.04, and a balance on hand of $631.82. The total receipts are $7,941.86.

The American Proctologic Society will hold its sixteenth annual meeting in Atlantic City, N. J., June 22 and 23, 1916. The profession is cordially invited to attend all meetings.

Personals.—Surgeon General William Crawford Gorgas, of the United States Army, addressed the Canadian Club, Toronto, January 17, on "Sanitation in Panama."

Prof. Ayres Kopke, of Lisbon, was recently awarded the prize, by the Sociedade de Georgraphia of Lisbon, for the best work by a Portugese writer on sleeping sickness.

Dr. Roy D. McClure, former resident surgeon at Johns Hopkins, has been made surgeon-in-chief to the new Henry Ford Hospital in Detroit.

Drs. E. L. Leckert and Isadore Dyer attended the meetings of the Conference on Medical Education, at Chicago, in February.

Dr. Rupert Blue received in January his reappointment to serve his second term as Surgeon General, United States Public Health Service.

Dr. John F. Oechsner (New Orleans) was elected head of the Charity Organization Society of this city.

Dr. Leo H. Bækeland, a member of the Naval Consulting Board, won the Perkins medal for distinction in industrial chemical research, awarded by the Society of Chemical Industry.

Assistant Surgeon General Leland E. Cofer, U. S. P. H. S., has been appointed by Surgeon General Blue to take over the Quarantine Station of the Port of New York.

Removals.—Dr. M. C. Garner, from Porterville to Meridian, Miss.

Dr. F. R. Singleton, from Pointe-a-la-Hache to Slidell, La.

Dr. C. B. Harrington, from Boydell to Wilmot, Ark.

Dr. Paul B. Landry, from Morley to Port Allen, La.

Dr. C. K. Olivier, from New Orleans to Abbeville, La.

Dr. J. W. Tillson, from Wisner to Cohay, Miss.

Dr. J. R. DeVelling, from Arleo to Laurel, Miss.

Married.—On January 31, at Bay Springs, Miss., Dr. A. R. Austin, of Freeney, to Miss May Robbins, of Bay Springs, Miss.

Died.—On January 23, 1916, Dr. Thomas P. Singletary, a prominent physician of Baton Rouge, La.

On February 6, 1916, Dr. O. Hendrick, of Meridian, Miss. Dr. Hendrick was the oldest living graduate of Tulane Medical Department and a very prominent physician of Meridian.

Book Reviews and Notices

The Practical Medicine Series. Vol. IV: Gynecology; Vol. VII: Obstetrics. The Year Book Publishers, Chicago, 1915.

The Practical Medicine Series, comprising ten volumes devoted to a review of the year's progress in medicine and surgery, has been issued annually for a number of years and needs no introduction to the profession. The volumes are compact, the abstracts are chosen with care by competent authorities who comment on each subject, and the illustrations are introduced when necessary.

Since the first appearance of the series, the volume on gynecology has been edited by Drs. Emilius C. Dudley and Herbert M. Stowe, both of whom are well known as surgeons and contributors to current medical literature. For a brief review of the really new questions in gynecology, this little volume has no superior.

The volume devoted to obstetrics is edited by Dr. Joseph B. DeLee, with the assistance of Dr. Herbert M. Stowe. The material is arranged under four heads: Pregnancy, Labor, Puerperium and the New Born. This permits of an easy grouping of the entire subject of obstetrics, and the editors have shown the usual excellent judgment in the selection of the abstracts and the editorial comments.

These two volumes are well worth the review by the busy practitioner, who can purchase any single volume of the series he may desire. MILLER.

The Obstetrical Quiz for Nurses, by Hilda Elizabeth Carlson. Rebman Company, New York, 1915.

This is a small book of approximately 300 pages designed for the use of graduate and undergraduate nurses in the lying-in room. It is arranged as a series of questions and answers covering the essentials of the science and art of obstetrics. In addition, it contains a chapter devoted to the preparation of antiseptic solutions, dosage, etc., and a chapter written by Drs. A. J. Rongy and S. S. Arluck on "Scopolamine-Morphine Anesthesia."

The book will appeal to the graduate nurse as a ready reference and will be of value to the undergraduate in class work.

MILLER.

Orthopedic Surgery. By E. H. Bradford, M. D., and Robert Lovett, M. D. Wm. Wood & Co., New York, 1915.

This is the fifth edition of the most popular text book on Orthopedic Surgery in English. It is 253 pages smaller than the edition published in 1905, the chapters being condensed in many places.

The chapter on Practical Details of Apparatus has been entirely left out, which is to be regretted, as the reviewer considers this was one of the most important chapters in the book.

Several of the articles have been partially rewritten and the new work by Abbott in lateral curvature is presented. The use of silk ligaments in the treatment of infantile paralysis is well described.

This book should be of great value to the general practitioner and the student of medicine. EDWARD S. HATCH.

The Care of the Baby, by J. P. Crozer Griffith, M. D. Sixth Edition. W. B. Saunders Company, Philadelphia.

While this book is originally intended to furnish "a reliable guide for mothers," it might well stand as ready and up-to-date reference for the general practitioner. It is written in plain, commonplace English and emphasizes the main principles of pediatrics in a style easily understood by the laity.

Dr. Griffith very wisely stresses the absolute uselessness of many treatments followed for so long by the more superstitious; for instance, the carrying of camphor bags about the body in order to prevent contracting infectious diseases may seem reasonable to some people, but the absurdity of such an idea is apparent to any thinking mind.

Again, the author very wisely calls attention to a fact that is worthy of observation by the profession, namely, the danger attending such diagnoses as "growing pains," "habit spasms," etc. After the appearance of a well developed case of tuberculosis hip, or a rheumatic endocarditis, it is too late to go back and reconsider one's blunder.

Dr. Griffith in his book discusses first the care and handling of normal babies; he then takes up the ordinary methods of handling sick babies and emergencies. He concludes with two appendices: the first dealing with the preparations of home remedies and the doses of the more popular drugs, while the latter includes rather full descriptions of some of the principles of infant feeding. Had Dr. Griffith confined himself more to the ordinary methods of preparing and handling whole milk dilutions he would have rounded out and completed a very useful and practical book for unprofessional use. His formulas, however, are all made from "top milk" mixtures, and, while they are plainly expressed and apparently easy to make up, top milk formulas are dangerous feedings to place in the hands of the average mother without the more or less constant guidance of a medical man. D. P. WEST.

The Practical Medical Series; Pediatrics, Vol. V., by Isaac A. Abt, M. D. The Year Book Publishers, Chicago.

This medical series has been quite generally accepted by the profession as a quick and reliable reference in all departments of medicine and surgery.

Dr. Abt, editing the volume on pediatrics, has succeeded well in bringing together in the most concise form the principles underlying the main essentials of the diseases of children. He has covered the whole subject in a way which will give the busy practitioner a quick insight into the fundamentals of the subject and at the same time will acquaint him in a measure with the latest work being done in new fields of development.

Among the features interesting especially to the pediatritian is the new classification of nutritional disorders outlined by Schelbe. This is merely an elaboration of the classification given by Czerny and Finkelstein, respectively. It is very conveniently outlined and each division is given with detail explanation.

On the subject of empyema, which is one that both the medical man as well as the surgeon is always vitally concerned, we are somewhat surprised that Dr. Abt has overlooked the siphon method, more recently improved by Kenyon of New York. In a series of unreported cases directed by Kenyon, a mortality of 53% was re-

corded; but it is interesting to note, that of those cases under six months of age, 50% were saved, while none were saved through the older resection method. The thoracentesis of Kleeman, described briefly by Dr. Abt, might well be cited as a still further modification of the siphon method. With increased experience it would not be surprising to find thoracentesis more generally favored than any other method. Any method or operation which lessens the danger from shock, secondary infection, pneumothorax and favors the expansion of the lung without any resulting deformity of the chest wall itself is certainly to be encouraged.

The book also includes a brief resume on orthopedics, edited by Dr. Charles A. Parker, M. D. The subject is well handled and is written in a very definite style. Several good illustrations are also shown. WEST.

Medical Electricity, Rœntgen Rays and Radium, by Sinclair Tousey, A. M., M. D., Second Edition. W. B. Saunders Company, Philadelphia and London, 1915.

This work as it is now presented is the most complete, comprehensive and up-to-date work of its kind. It contains all that is good and of value on the subjects of Medcial Electricity, Rœntgen Rays, and Radium that can be embodied in one volume of 1219 pages.

The first half of the book after general considerations, is devoted to static electricity, dynamic electricity, the physiological effects of electricity, electro-diagnosis and ionic medication by electrolysis. The chapter on Electrotherapy has been enriched by the inclusion of several of Machado's tabular classifications of electric methods, effects and uses. Nearly 200 pages are devoted to the subject of electricity in diseases of the nervous system and high frequency currents. Following a description of the phenomena accompanying the transmission of electricity through gases and through a vacuum the author presents the subjects of X-ray fluoroscopy, radiography and rœntgenotherapy in a most thorough manner. Radium, radioactivity and radium therapy, though last discussed, are not less taken care of. These last two sections cover over 500 pages of text. The new articles which deserve particular note are on diatherms, sinusoidal currents, radiography with intensifying screens, the Coolidge tubes and the author's method of X-ray dosage. There are 798 illustrations throughout the text, 16 in colors.

Enough has been pointed out to show the large scope of this work which, with the aid of its complete index is bound to remain for a long time the best work of reference on these subjects at our command. L. L. CAZENAVETTE.

Nervous and Mental Diseases. By Archibald Church, M. D., and Frederick Peterson, M. D. Eighth Edition, thoroughly revised. W. B. Saunders Company, Philadelphia and London.

Church and Peterson on Nervous and Mental Diseases have been before the profession for a number of years and therefore need no

introduction here. This the eighth edition of this popular work is not found wanting. It has furnished the opportunity for a few necessary changes to meet the constant advances in this broad field. For instance, the subject of syphilis of the nervous system is found to meet the recent advances and discoveries in this branch. The importance of spinal fluid investigations in various organic diseases of the brain and cord is referred to when the occasion demands throughout the text. Again the relation of glands of internal secretions to nervous disorders has of late years come prominently to the fore and such facts as have become of established importance are found throughout the text.

This new edition will no doubt increase the popularity of the work, which can always be consulted with benefit by specialist and practitioners. CAZENAVETTE.

A Text Book of Pathology. By Alfred Stengel, M. D., and Herbert Fox, M. D. W. B. Saunders Company, Philadelphia and London, 1915.

To those students of pathology already familiar with Stengel's former exhaustive work concerning the etiology of disease, pathological anatomy, both gross and microscopical, as well as pathological anatomy, this new edition with the co-operation of Dr. Herbert Fox needs but little introduction. In this sixth edition the sections on Inflammation, Retrogressive Processes, Disorders of Nutrition and Metabolism, General Etiology and Diseases due to Bacteria have been largely rewritten. Sections on the Glands of Internal Secretion and Transmissible Diseases have been added in place of the former disproportionately long chapter on the Nervous System. Over one hundred new illustrations in black and white have been added, as well as many fine colored plates. The colored plates by Chase are exceptionally illustrative.

Considered as a "text book" of pathology this present edition is entirely too large. The sections on inflammation and regeneration are full and detailed, but the very important sections on retrogressive and progressive tissue changes are treated in too general a way for the undergraduate student to grasp readily. The variations in growth of usual tumor masses incident to the varying regional distributions are not discussed in enough detail.

In covering the entire subject as much space has been allotted to the rarer manifestations of disease as is given to the various infectious neoplasms and inflammations commonly met with, and which assume more prominence on account of the frequency with which they are encountered. This is especially noticeable in a text for use in our southern states, and is exemplified in this instance by the brevity with which such diseases as gonorrhea, amebic dysentery, leprosy, syphilis, pellagra and malaria are dealt with.

F. M. JOHNS.

Publications Received

W. B. SAUNDERS COMPANY. Philadelphia and London, 1915 and 1916.

A Text-Book of the Practice of Medicine, by James M. Anders, Ph. D., LL. D. Twelfth edition, thoroughly revised.

The Treatment of Acute Infectious Diseases, by Frank Sherman Meara, M. D., Ph. D.

Post-Mortem Examinations, by William S. Wadsworth, M. D.

Bandaging, by A. D. Whiting, M. D.

Practical Cystoscopy, by Paul M. Pilcher, A. M., M. D. Second edition, thoroughly revised.

The Medical Clinics of Chicago, January, 1916, Volume 1, Number 4.

Bone-Graft Surgery, by Fred H. Albee, A. B., M. D., F. A. C. S.

A Text-Book of Physiology, by William H. Howell, Ph. D., M. D., Sc. D., LL. D. Sixth edition, thoroughly revised.

The American Illustrated Medical Dictionary, by W. A. Newman Dorland, A. M., M. D., F. A. C. S. Eighth edition, revised and enlarged.

LEA AND FEBIGER. Philadelphia and New York, 1916.

A Treatise on the Principles and Practice of Medicine, by Arthur R. Edwards, A. M., M. D. Third edition, thoroughly revised and rewritten.

The Pratice of Obstetrics, by Edwin Bradford Gragin, A. B., A. M., M. D.

An Autobiography, by Edward Livingston Trudeau, M. D.

WILLIAM WOOD AND COMPANY. New York, 1915.

Urgent Surgery, by Felix Lejars, translated from the seventh French edition by William S. Dickie, F. R. C. S., and Ernest Ward, M. A., M. D., F. R. C. S. Third English impression.

THE YEAR BOOK PUBLISHERS. Chicago, 1915.

The Practical Medicine Series. Volume IX: **Skin and Venereal Diseases**, edited by Oliver S. Ormsby, with the collaboration of James Herbert Mitchell, M. D. Volume X: **Nervous and Mental Diseases**, edited by Hugh T. Patrick, M. D., and Peter Bassoe, M. D.

COLUMBIA UNIVERSITY PRESS. New York, 1915.

Harvey's Views on the Circulation of the Blood, by John G. Curtis, M. D., LL. D.

THE MACMILLAN COMPANY. New York, 1916.

The Aftermath of Battle, by Edward D. Toland, with a preface by Owen Wister.

REBMAN COMPANY. New York, 1916.

A Textbook of Nervous Diseases, by Robert Bing. Only authorized translation by Charles L. Allen, M. D.

FORBES AND COMPANY. Chicago, 1916.

Painless Childbirth, Eutocia and Nitrous Oxid-Analgesia, by Carl Henry Davis, A. B., M. D.

SURGERY PUBLISHING COMPANY. New York, 1916.

Surgical Operations with Local Anesthesia, by Arthur E. Hertzler, M. D. Second edition.

WASHINGTON GOVERNMENT PRINTING OFFICE. Washington, D. C., 1916.

Public Health Reports. Volume 31, Numbers 1, 2, 3, 4, 5.

Report of the Department of Health of the Panama Canal for the month of November, 1915.

Report on the Medico-Military Aspects of the European War, by Surgeon A. M. Fauntleroy, U. S. N.

Public Health Administration in Richmond, Indiana, by J. C. Perry, U. S. P. H.

MISCELLANEOUS:

Forty-seventh Annual Report of the Secretary of State on the Registration of Births and Deaths, Marriages and Divorces in Michigan for the year 1913. (Wynkoop Hallenbeck Crawford Co., State Printers, Lansing, Mich., 1915).

The Institution Quarterly. Vol. VI. Springfield, Ill., December 31, 1916.

Transactions of the American Pediatric Society. Volume XXVII. Lakewood, N. J., May 4-26, 1915.

Reprints

Range Extension of Ceanothus Sanguineus, by Oliver A. Farwell.

Report of the Commission on Cancer, by Jonathan M. Wainwright, M. D.

Some Practical Points in Eye-Work; Torticollis Relieved by Tenotomy of the Inferior Oblique; Anomalies of the Accommodation Clinically Considered, by Alexander Duane, M. D.

The Glands of Internal Secretion and their Importance as Therapeutic Agents, by Carey Pratt McCord.

What is the Best End-Point of the Reaction in the Frog-Heart Method of Digitalis Assay? by H. C. Hamilton and L. W. Rowe.

Inoculation Experiment with Pure Culture of Spirochaeta Hyos, by Walter E. King and Raymond H. Drake.

The Histogenesis of the Reproductive Processes in Mammals, by Henry O. Marcy, A. M., M. D., LL. D.

The Internal Secretions—Some Clinical Aspects Illustrated; Plastic Surgery—Corrective and Palliative Repair—in the Treatment of Malignant Disease; The Cure of the "Incurable," a Plea for More Accurate Diagnosis and More Careful Prognosis in Malignant Disease, by William Seaman Bainbridge, A. M., Sc. D., M. D., C. M.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans for January, 1916.

Cause.	White	Colored	Total
Typhoid Fever	1	4	5
Intermittent Fever (Malarial Cachexia)	.....	1	1
Smallpox	.....	.....	....
Measles	.....	.....	....
Scarlet Fever	.....	.....	....
Whooping Cough	.....	.....	....
Diphtheria and Croup	3	.....	3
Influenza	17	9	26
Cholera Nostras	.....	.....	....
Pyemia and Septicemia	.....	.....	....
Tuberculosis	39	40	79
Syphilis	.....	1	1
Cancer	19	10	29
Rheumatism and Gout	.....	1	1
Diabetes	.	.....	4
Alcoholism	.....	.....	....
Encephalitis and Meningitis	2	2	4
Locomotor Ataxia	.....	.....	....
Congestion, Hemorrhage and Softening of Brain	16	8	24
Paralysis	1	1	2
Convulsions of Infancy	.....	.....	....
Other Diseases of Infancy	12	8	20
Tetanus	.....	.....	....
Other Nervous Diseases	2	.....	2
Heart Diseases	61	51	112
Bronchitis	4	1	5
Pneumonia and Broncho-Pneumonia	19	29	48
Other Respiratory Diseases	2	1	3
Ulcer of Stomach	1	2	3
Other Diseases of the Stomach	1	3	4
Diarrhea, Dysentery and Enteritis	17	8	25
Hernia, Intestinal Obstruction	3	3	6
Cirrhosis of Liver	10	4	14
Other Diseases of the Liver	5	3	8
Simple Peritonitis	1	1	2
Appendicitis	2	1	3
Bright's Disease	19	21	40
Other Genito-Urinary Diseases	10	6	16
Puerperal Diseases	4	2	6
Senile Debility	2	1	3
Suicide	5	.....	5
Injuries	26	22	48
All Other Causes	8	5	13
Total	316	249	565

Still-born Children—White, 17; colored, 17. Total, 34.

Population of City (estimated)—White, 276,000; colored, 102,000. Total, 378,000.

Death Rate per 1000 per Annum for Month—White, 13.74; colored, 29.29. Total, 17.94. Non-residents excluded, 16.09.

METEOROLOGICAL SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure 30.18

Mean temperature .....61.

Total precipitation ..... 4.46 inches

Prevailing direction of wind, southeast.

New Orleans Medical and Surgical Journal.

VOL. LXVIII. APRIL, 1916. No. 10

Original Articles

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. A complimentary edition of one hundred reprints of his article will be furnished each contributor should he so desire. Covers for same, or any number of reprints, may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

HOOKWORM HISTORY SCHEDULES OF TWO MALE PATIENTS TREATED WITH THYMOL AT THE U. S. MARINE HOSPITAL, WILMINGTON, N. C.

By FLOYD GRAVE and H. M. SLATER.

Introduction.—The publication of these histories has two points in particular in view, namely, (1) to place on record certain results obtained in the use of oil of chenopodium, and (2) to show the schedule method that has been in use for several years at the U. S. Marine Hospital in Wilmington in taking clinical histories of parasitic infections.

Our schedules consist of a three-page printed sheet of catch words that represent the characters or symptoms it is desired to observe. These words are "checked" in case of positive findings and crossed out in negative findings. While the resulting diction is not always so euphonious as in some other plans that are adopted, the schedules have the advantage of greater uniformity and completeness, so that in a large series of cases the separate symptoms can be more easily compared than is usually the result in clinical histories taken by different observers. There is nothing new in principle in the plan, but so far as can be judged from

literature on hookworm disease, its application and details represent several departures from usual procedures. While in charge of the Marine Hospital at Wilmington, I assigned cases to my different associates in order to test the schedule system rather thoroughly in hookworm infection, and I now propose to publish several of these histories in various medical journals in order to give the system, as applied to hookworm disease, a wider publicity. C. W. Stiles.

CASE NO. 9. UNCINARIASIS. TREATED WITH THYMOL.

By H. M. SLATER, M. D., Assistant.

Family history.—R. L., from Bolton, N. C., brother of Case No. 10. Patient is a white boy, six years old, and is the seventh of a family of eight children. The family history is unimportant except that the entire family is an extreme type of the tenant white class, in very poor financial circumstances, of inferior mental status, and every member of the family has the general outward appearance of hookworm effects. There is at least one case of pellagra (a sister, age 14) and an additional sister seems to have died from pellagra.

Personal history.—The patient has had poor general health, has always been subject to frequent coughs and colds, has had measles, mumps, scarlet fever, and whooping-cough, but his history is negative for chicken-pox, chorea, convulsions and diphtheria. He denies the use of tobacco in any form and does not dip snuff. He has had ground itch every summer as far back as he can remember.

Present illness.—The patient can give no definite date of onset of his present illness. As nearly as could be ascertained, for the past two and one-half years he has been gradually losing weight and strength. During the past year he has been troubled with shortness of breath on exertion but at no time has there been any shortness of breath when lying down. During the past year or so he has been troubled with some pain in the epigastrium which has been more or less continuous. In addition there has been some aversion to food, with nausea and vomiting. The vomiting has had no relationship to the time of meals. There has been no vomiting of blood. His bowels have been regular and at no time have the stools been tarry.

The patient does not give a history of being a "dirt eater." He denies having eaten dirt in the past or having an abnormal appetite of any kind. This was disproved by finding in his stools, while in the hospital, large quantities of paper.

Physical examination.—General: His standing height is 3 feet 6 inches, sitting height 1 foot, 9.75 inches; without shoes and stockings and coatless, he weighs 27½ pounds. General appearance is poor; apparent age five years; personal hygiene poor; emaciation slight; and he looks anemic; head is of about medium size and is slightly boxed; hair blond, dry but smooth; **Pediculus capitis** present.

Glasses are not worn; exophthalmos, von Graafe's and Stellwag's signs are negative; eyebrows poorly developed; stare is blank; pupils are contracted, also regular in outline; reactions to light and accommodation are normal; convergence is good in the right eye and is well maintained; there is an internal strabismus of the left eye; all his brothers and sisters but two have left internal strabismus, which is not present in the father or mother, but which, according to the father, was present in patient's paternal grandmother. There is no nystagmus; sclerotics are pearly and the conjuctivæ are very pale; there is no night blindness, blepharitis, or trachoma. The eyesight was not tested as the patient does not know the alphabet.

Ears normal in shape, without history of discharge or pain, and the hearing is good in both ears.

Facial expression has a pinched, listless quality to it, which is somewhat masked by marked edema of the eyelids and the face. The skin is quite pale and dry.

Trunk symmetrical, negative as to scoliosis, kyphosis, and lordosis. Shoulders square but slightly drooped; scapulas slightly winged; abdomen symmetrical, markedly protuberant, without evidence of abnormal peristalsis or hernia; girth at umbilicus 52 cm.; superficial veins of abdomen prominent, coursing downward to join others, at the inguinal region which are coursing upward at the thighs; on palpation, the abdominal walls are somewhat tense, but no mass is felt.

Arms and legs not deformed; patient reports some joint pains; some evidence of emaciation which is partially masked by edema; large veins of legs are prominent over upper front and lateral aspects of thighs, extend upward and unite in region of Poupart's ligament with prominent veins from thorax and abdomen.

Skin slightly dry, pale, without jaundice or atrophy; little perspiration, no night sweat, ulcer, scar, scabies, **Tinea**, or **Pediculus vestimenti.**

Edema present under eyes, some on the feet and legs but none noticed elsewhere.

Muscles soft and flabby; infraspinatus rather undeveloped; grip poor; right handed; dynamometer tests, right 3-3.5-3, left 2.5-3-3.75 (kilos).

Thyroid is normal, submaxillary and cervical glands are enlarged.

Respiratory system.—Speech slow, hesitating, drawling, no stuttering. Mouth-breathing moderate; nose with tallowy skin; negative as to epistaxis, discharge, and obstruction; both tonsils enlarged but not cryptic; adenoids not discovered.

Chest normal in shape. Respiratory rate 19; no dyspnea; chest measures 54.25 cm. on inspiration, 51.5 cm. on expiration, giving an expansion of 2.75 cm.; respirations free and equal; vocal fremitus normal; percussion resonance increased at right; breath sounds over entire chest are somewhat exaggerated and harsh, but whispered voice is normal and rales are not heard. Spirometer tests

gave 400-480-480 cc. Percussion note over right apex is somewhat impaired but normal over remainder of thorax in front; over right back, percussion note is impaired down to level of spine of scapula, note over remainder of back is normal.

Circulatory system.—Temperature 37.7° C.; pulse 122, rapid, regular in force and rhythm, with normal tension; blood pressure, systolic 90, diastolic 64 (Tycos). Pulsations marked in precordial, jugular, and epigastric regions; heart enlarged to left, apex beat diffuse, 1 cm. outside nipple line, and 7.5 cm. to left of midsternal line; no retrosternal dullness; beat sounds clear, heaving; at the apex, the first sound is short, followed by a low-pitched, blowing murmur which lasts throughout systole and is followed by the second sound which is somewhat lower pitched than normal; this systolic murmur is transmitted to the left axilla and is heard at the angle of the scapula; at the apex, the heart beat is diffuse and forcible, and the point of maximum impulse is located in the sixth interspace outside the mid-clavicular line; for blood counts, see table 2.

Digestive system.—Lips pale, almost devoid of color, without herpes; tongue pale, not coated or fissured; teeth moderately decayed, uncared for. Gums slightly spongy, pale, no pyorrhea. Appetite good, prefers sweets to sours. Complains of pain in stomach, with nausea and vomiting, but not of epigastric tenderness, heartburn, hematemesis, or eructations; stools show eggs of **Necator americanus.**

Liver and spleen palpable; edge of liver palpable at costal margin.

Nervous system.—Sleep is good, but with dreams; complains of headache and dizziness; is listless in behavior. Reflexes, superficial and deep, are active; Babinski's reflex negative.

Genito-urinary system.—States that he urinates two to three times per day and wets the bed; urination not painful or difficult. Urinalysis negative.

DIAGNOSIS.—Uncinariasis, pronounced.

TREATMENT.—The treatment (table 1) consisted of putting the patient upon a soft diet free from fats and oils for the twenty-four hours previous to the administration of the thymol; then with the administration of 20 cc. of a saturated solution of magnesium sulphate at 6 p. m., with an abundance of water; the next morning he was given 2.5 grains of thymol at 7 a. m., and again at 8 a. m. 2.5 grains were given, followed at 10 a. m. by 20 cc. of magnesium sulphate. The patient was not allowed any breakfast except some coffee without milk. The above routine of treatment was followed in all the treatments with the exception of the fourth and fifth weeks, when a total of ten grains was given in each instance, and again in the sixth and seventh weeks when a total of twenty grains was given in each case.

The treatments were all well borne. There was no interference with the normal life of the patient except on the day of the treatment, when he was kept in bed until after the final dose of magnesium sulphate had been given.

The results of each administration of the thymol are shown in table 1. As will be seen, the male and female worms are about equally divided among the total number secured. The majority of the worms were passed at the first two treatments.

The blood picture is shown in table 2. On admission the red cells were 1,928,000 with the hemoglobin at 24%. On discharge the red cells had increased to 4,568,000 and the hemoglobin to 70%. There was practically no change in the blood picture until treatment with ferrum reductum was begun on July 28. This was given in 1-grain doses three times a day. The blood examination at the end of the second week after this date shows that the hemoglobin had increased 19% points in seven days. The increase the following week was even greater when there was an increase by 24% points. For the seven days following August 31, the red cells increased 508,000, as compared with an increase of 148,000 for the seven days preceding this date. During the last week of the treatment the red cells increased 760,000, while the hemoglobin remained practically stationary.

Table 2 shows the differential blood picture during the stay at the hospital. It does not show anything important except that there was a high eosinophile count varying from 17% to 38%. There was a slight increase in the neutrophiles during the last week, which was probably due to a superficial wound of the foot.

CONDITION ON DISCHARGE.—The patient was discharged on August 27. The physical examination at this time showed that the improvement has been marked since his admission. He has gained ten pounds in weight, weighing 37.5 pounds. His conjunctivæ are still pale, but there is a noticeable increase in the color since admission. The scleræ have just a suspicion of being pearly. The internal strabismus of the left eye has improved somewhat, due possibly to the better nourishment of the muscles concerned.

The abdomen is protuberant, but all signs of ascites have disappeared, likewise the edema of the feet and face. The systolic murmur still persists, but it is not so loud, and the "booming" quality of the heart sounds has largely disappeared. The point

of maximal impulse measures 6.5 cm. from the mid-sternal line, a decrease of 0.75 cm. since admission. The liver and spleen are still palpable.

A great change has been noted in the outward appearance of the patient. On admission he seemed to be leading little more than a vegetative existence. He cared only to sit around or sleep. His voice was so weak that one could hardly understand what he was trying to say. He was not in the least interested in what the boys around him were doing, and under no pretext could he be enticed to play with them. After two or three weeks, a marked change was evident in him. He began to be alive to what was going on about him. He began to play with the boys and, before he was discharged from the hospital, he seemed to be much alive and as mischievous as any normal boy of his age.

Patient was seen for the last time at his home on October 11. He had continued to improve since his discharge from the hospital, was spirited and lively. He had changed from a weed to a young animal. Dynamometer tests increased to, right 9-9-9, left 9-8-6.5. Heart seemed normal in size, apex beat punctuate, inside nipple line, sounds normal and clear, without murmur. For blood, see table 2.

TABLE 1.—Doses of thymol and number of worms collected. Case No. 9.

1914	Grains of Thymol			Hookworms Collected.		
	1st	2nd	3rd	Male	Female	Total
July 12	2.5	2.5	2.5	159	88	247
July 19	2.5	2.5	2.5	16	75	91
July 26	2.5	2.5	2.5	6	19	25
Aug. 3	2.5	5.0	2.5	1	4	5
Aug. 10	2.5	5.0	2.5	2	1	3
Aug. 17	5.0	10.0	5.0	1	4	5
Aug. 24	5.0	10.0	5.0	1	4	5
Total	....	....	....	186	195	381

TABLE 2.—Blood Counts. Case No. 9.

1914	Total red cells	Total white cells	Hb (sahli)	Color index	Polymorphonuclears			Mononuclears		Transitionals
					Neutro.	Eosino.	Baso.	Small	Large	
July 12	1,928,000	7,000	24	0.62	53.5	17.5	1.5	23.0	3.0	1.5
July 19	2,248,000	8,800	25	0.56	50.0	24.5	1.5	22.0	2.0	0.0
July 26	2,320,000	9,400	28	0.60	47.5	38.0	0.0	14.0	0.5	0.0
Aug. 3	2,468,000	11,550	29	0.59	44.5	23.0	1.0	26.5	4.5	0.5
Aug. 10	2,976,000	6,900	48	0.81	49.0	21.0	2.0	27.0	1.0	0.0
Aug. 17	3,808,000	5,750	72	0.95	34.0	25.0	0.5	37.0	3.5	0.0
Aug. 24	4,568,000	13,870	70	0.77	64.5	22,5	0.5	12.5	0.0	0.0
Oct. 11	4,623,000	9,440	90	0.97	66.0	6.0	0.0	6.0	19.5	2.5

CASE NO. 10. UNCINARIASIS. TREATED WITH THYMOL.

By FLOYD GRAVE, M. D., Acting Assistant Surgeon.

V. L., from Bolton, N. C.

Patient is a white boy, age 10 years.

Family history.—Father works in a lumber mill. Mother living, has had nine children, all living except a daughter who died this summer, at the age of four years, supposedly of pellagra. The family is rather an extreme example of the tenant white class; all members, judged from clinical appearances, are hookworm patients and one of the girls, age 14 years, now has pellagra.

Personal history.—Born in South Carolina. Brother of Case No. 9. Height sitting, 1 foot, 11.5 inches; standing, 4 feet, ⅜ inch. Weight 46 pounds. Patient's general health is poor. His history is positive for frequent coughs, colds, influenza, malaria, measles, and whooping-cough; negative for chicken-pox, mumps, pneumonia, rickets, scarlet fever, smallpox, vaccination, tonsilitis, and typhoid. He denies chewing, dipping, and smoking. Every summer, as far back as he can remember, he has had rather severe attacks of ground itch. He lives in a small lumber-mill settlement, in a "company house" of very modest appointments, provided with a privy.

Physical examination.—July 12, 1914. Physical condition is markedly poor; general appearance poor; apparent age seven or eight years; personal hygiene poor; emaciation marked, very slender; head medium in size; hair blond, dry, smooth, medium in quantity; no pediculosis.

Eyebrows well developed; eyes with a blank stare; pupils slightly dilated, but react normally to distance and light; external ocular movements are good, except that convergence is weak and not well sustained; scleræ pearly, conjunctivæ pale; eyesight not tested, eyes negative as to glasses, exophthalmos, von Graafe, strabismus, nystagmus, night blindness, blepharitis, and trachoma.

Ears are normal in shape; patient sometimes has earaches; no discharge; hearing good.

Facial expression pinched, blank, and languid. Trunk is symmetrical, negative for scoliosis, kyphosis, and lordosis. Shoulders square, right lower than left; clavicles prominent; scapulæ winged; abdomen normal in form, walls flabby and loose, girth at umbilicus 54 cm.; no hernia.

Arms and legs normal in form; joint pains at shoulders and wrists.

Skin is pale and sallow, but otherwise normal except on legs where it is dry and scaly; somewhat suggestive of pellagra; there is a moderate amount of perspiration.

Edema was not noticed.

Muscles soft and flabby; infraspinatus underdeveloped; grip fair; right handed; dynamometer tests right hand 9-9-10, left hand 9-9-9 (kilos).

The posterior cervical, the axillary, and the inguinal glands are palpable but not excessively enlarged.

Respiratory system.—Speech is slow, hesitating, drawling, nasal in quality, negative as to stuttering. Mouth breathing is very marked; patient reports epistaxis; skin of nose is tallowy; no obstruction, bridge narrow. Both tonsils are slightly enlarged; adenoids not discovered.

Chest flat. Respiratory rate 20, normal right and left; at rest no dyspnea, but even upon slight exertion dyspnea becomes marked and cervical pulsations very violent; chest measures 60¼ cm. at inspiration, 56¾ at expiration, so that the expansion is 3.5 cm.; dry spirometer tests gave 800, 800, and 880 cc.

Vocal fremitus and percussion resonance normal, breath sounds over entire chest are exaggerated, but have the same relative intensity; whispered voice normal; patient is negative as to rales, bronchitis, hemoptysis, and expectoration.

Circulatory system.—Temperature 37.4° C., pulse 90, regular in force and rhythm; vessel wall compressible; blood pressure, diastolic 54, systolic 98 (Tycos). Pulsations slight in precordial, marked in jugular region; heart normal in size, apex beat punctuate, inside nipple line, 6.5 cm. from midsternal line; no shock or thrill palpable; dullness over precordium is not increased to the left or right; just inside the point of maximum impulse there is a soft blowing systolic murmur probably hemic), that is transmitted for a short distance into the left axilla. For blood counts see table 4.

Digestive system.—Lips very pale, no herpes; tongue pale with a light, moist, white coat, teeth uneven, uncared for, but in a fair condition. Gums normal; appetite good to poor, prefers sours to sweets, admits that formerly he was a dirt-eater but disclaims the habit at present. Complains of pain in the stomach, epigastric tenderness on pressure, heartburn, nausea, vomiting, and eructations, but not hematemesis. Bowels regular except for some diarrhea. Stools with eggs of **Necator americanus**, 10 being in an 18 by 18 mm. preparation; negative for other parasites. Liver edge is palpable and extends 3 cm. below the costal margin in the midclavicular line.

Nervous system.—Sleeps well but has dreams and grits the teeth. Complains of headache and occasional dizziness. He is listless, taking no interest in what is going on about him. Has not advanced beyond the first grade in school. Answers to questions are delayed and in general he seems markedly below boys of his age.

Genito-urinary system.—Says he urinates two or three times per day, and that his micturition is attended with burning; wets the bed. Chemical and microscopic examination of the urine was negative: color, lemon, clear; no precipitate; reaction very slightly acid; specific gravity 1016; blood, albumen, and sugar negative.

DIAGNOSIS.—Uncinariasis, very typical and pronounced.

TREATMENT.—The weakness of the patient made the administration of small doses of thymol imperative. Frequent attacks of vomiting rendered the first treatment difficult, but after the first three treatments the doses were well borne and no symptom was produced except a slight headache. In all seven treatments a total of 343 hookworms was expelled, of which 155 were males and 188 were females. After the third treatment, the blood showed no improvement, and it was considered advisable to administer reduced iron; and doses of one grain each were given, three times a day. The results of this treatment were quite remarkable, as may be seen by referring to the chart. During the time of the treatments, which extended over a period of seven weeks, patient gained 12 pounds in weight and showed a corresponding improvement in every other way. His mental condition is greatly improved and he is able to take a lively interest in all that is going on about him.

A physical examination made August 16 showed the following changes:

General appearance fair; personal hygiene good; hair oily, abundant; stare absent; pupils normal, sclerotics slightly pearly; conjunctivæ slightly pale. Facial expression normal and bright: girth had increased from 54 cm. to 67.5 cm.; skin moist, much perspiration; not rough on legs; muscles not flabby; dynamometer, right 9-8-9, left 7-8-6 (kilos); only the cervical glands palpable; speech clear, nasal; mouth breathing moderate; respira tory rate 24; inspiration 65 cm., expiration 61.5 cm.; breath sounds normal; pulse 70; blood pressure, diastolic 54, systolic 98; jugular pulsations slight; heart, dullness just outside nipple line; apex beat not seen; murmurs disappearing; lips normal; tongue not pale; gums slightly spongy; appetite good; epigastric tenderness and heartburn absent; nausea much decreased, no vomiting; liver palpable 2 cm. below costal margin; urinates five to six times per day, some burning. General condition greatly improved, gain in weight eight pounds.

The patient was seen for the last time October 11, when he was so changed from his appearance in July as to be scarcely recognizable. This change has caused much comment among his neighbors, and his school-teacher remarked that while last year he was indolent, he was now lively, mischievous, and bright. Dynamometer tests showed an increase in the right (to 6-11-12),

but not in the left (9-9-9). Inspiration gave him 64.5 cm., expiration 59 cm. The systolic murmur had become very slight. The blood had become practically normal, see table 4.

TABLE 3.—Doses of thymol and number of worms collected. Case No. 10.

1914	Grains of Thymol 1st	2nd	3rd	Hookworms Collected. Male	Female	Total
July 12	4	4	2	87	70	157
July 19	4	4	2	20	29	49
July 27	5	5	2	9	10	19
Aug. 3	5	5	2	5	7	12
Aug. 9	5	5	2	2	10	12
Aug. 18	5	10	5	27	56	83
Aug. 23	5	10	5	5	6	11
Total	....	....	....	155	188	343

TABLE 4.—Blood counts. Case No. 10.

1914	Total red cells	Total white cells	Hb. (sahli)	Color index	Polymorphonuclears Neutro.	Eosino.	Baso.	Mononuclears Small	Large	Transitional
July 11	2,384,000	4,280	32	0.67	60.4	10.6	0.6	16	12.4	0
July 18	2,099,000	5,320	29	0.69	53.5	20.5	....	18	6.0	2
July 26	2,072,000	7,800	29	0.70	55.5	22.0	1.5	17	3.0	1
Aug. 2	2,688,000	7,400	42	0.78	56.0	17.5	1.0	10.5	13.0	2
Aug. 10	3,336,000	6,550	64	0.96	69.0	20.0	0.5	9.0	1.5	0
Aug. 16	3,988,000	5,950	82	1.03	59.5	12.5	1.5	17.0	8.0	1.5
Aug. 24	4,184,000	7,300	91	1.08	71.0	10.0	1.5	9.0	7.5	1.0
Oct. 11	4,992,000	5,680	98	0.98	77.0	1.5	0.0	10.5	10.5	0.5

AN EPIDEMIC OF LA GRIPPE.

By CHAS. S. HOLBROOK, M. D., and WM. B. TERHUNE, M. D., Jackson, La.

The wave of infectious colds which has swept over this country the past few months prompted the Resident Staff of the East Louisiana Hospital for the Insane to study most carefully and report an epidemic of what we have been pleased to term La Grippe.

The careful observation under which our patients are kept has enabled us to study the disease from its incipiency to its termination in all of the one hundred and fifty cases included in this report. Doubtless there were mild cases that never came under observation.

Origin of the Epidemic.—On the 24th of November a physician in charge of the male patients complained of suffering from a severe "cold." This was the first case we have a record of.

The physicians are in closer contact with the outside world than the other residents of the institution, so it is probable that the infection was introduced by him.

COURSE AND DURATION.—The second case developed six days after the first, a male patient being attacked. During the next four days new cases developed daily among the male patients, but nowhere else within the institution. On the fourth day following the outbreak among the male patients, a male employee contracted the disease. For the following five days many new cases developed among the attendants. The epidemic among the male patients reached its height during this time. On the fifth day following the onset of the contagion among the male attendants, a female attendant employed in the main dining hall became ill. It was not until four days later that another case occurred among the female employees, after which time new cases developed daily among them.

Chart One.

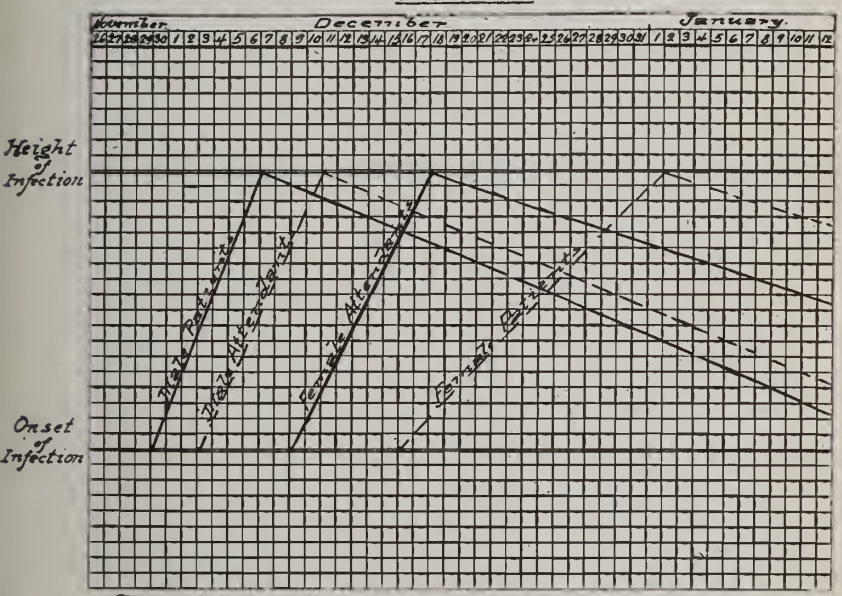

Chart showing time of onset among residents of the institution. Note the interval between each group.

By now the epidemic was subsiding among the male patients, but was at its height among the male attendants. On the seventh day after the outbreak occurred among the female attendants, the first case was reported among the female patients. It is of

importance to note that the male and female patients rarely come in contact, while the male and female attendants are very closely associated, in some instances a man and his wife both being employed as attendants. This is of interest when we observe how the epidemic spread. First a physician in close contact with the male patients is attacked; then the male patients themselves. Next the male attendants; then the female attendants, and finally the female patients.

The duration of the epidemic was approximately 42 days, although a very few cases have developed since then, and these are not included in this report. As we have seen the epidemic beginning during the latter part of November—reached its height the last part of December, and ended abruptly the middle of January. During the two months subsequent to this time the institution has been practically free from La Grippe.

Chart Two.

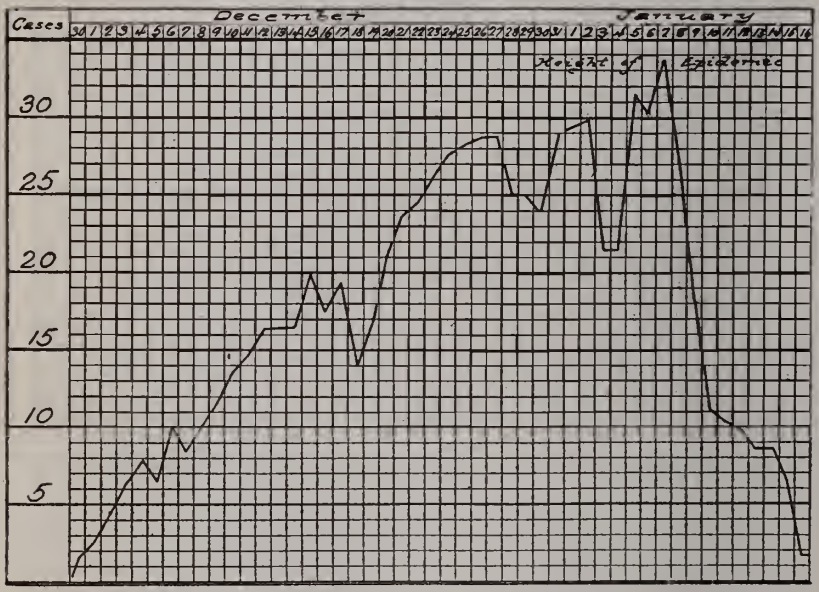

Chart showing the Course of the Epidemic.

In Osler's *System of Medicine* it is stated that, "The robust members of the community seem more susceptible to influenza." This was noticeably true during this epidemic. The percentage of infection among sixteen hundred patients was five per cent., while forty-two per cent. of the one hundred and twenty attend-

ants employed were attacked.

SYMPTOMS.—The symptoms presented by the patients during this epidemic were practically the same in all. Hyperpyrexia was the most constant symptom. In eighty-nine per cent. of one hundred and fifty cases the temperature was over 102°. The high fever was most alarming; a temperature of 104° to 105° was not at all unusual. In only a few cases was an initial chill reported, although a number of patients experienced a chilly sensation. Coryza was complained of in seventy-nine per cent. of the cases; headache in fifty per cent.; backache in twenty-five per cent.; pain in the thorax in twenty per cent., and abdominal pain in six per cent. Forty per cent of the patients were greatly prostrated during their illness, and practically all of them were very weak when they first got out of bed. Forty-six per cent. of those attacked were severely nauseated and vomiting was often a very troublesome symptom. Twenty-three per cent. showed nervous manifestations, such as insomnia and restlessness, while fifty-two per cent. suffered from an unpleasant cough.

The blood counts usually showed a total white cell count of from nine to twelve thousand, approximately thirty per cent. of which were small mononuclear cells.

Smears of sputum from the patients were examined as a matter of routine. In the majority of the cases, small, gram negative, bacilli, morphologically *B. influenzae,* were found associated with many cocci. We were able to obtain several characteristic cultures of this bacillus on blood agar.

COMPLICATIONS.—Pneumonia was the most common complication. It developed in ten per cent. of those infected. Eight per cent. developed an otitis media. Nine patients suffered from pleurisy, three from empyema, and two from severe laryngitis. Herpes simplex was encountered in six cases.

MORTALITY AND AUTOPSIES.—Eleven per cent. of the inmates of the institution who were infected died, while the mortality was only two per cent. among the employees. With two exceptions those who succumbed were elderly people.

Four autopsies were held. In each the lesions of bronchopneumonia were found. In one a left-sided empyema was discovered. From this pus *B. influenzae* was isolated.

TREATMENT.—An initial purgative was always ordered and an intestinal evacuant was administered when indicated thereafter.

The patients were isolated as much as possible, and the rooms in which they were kept were always well ventilated.

Fever was combated with tepid baths, and prostration with stimulants, such as whiskey and digalen. Great care was taken to keep the patients warm, and the only food allowed them consisted of liquids and other articles of soft diet.

Severe pain, insomnia, and restlessness were usually combated with aspirin, codein, and small doses of morphin. A prescription containing aspirin and Dover's powders seemed to be more beneficial than anything else, and for that reason it was used almost as a matter of routine.

1st. The wave-like manner in which the infection spread over the institution.

2nd: The sudden beginning, duration, and abrupt ending of the epidemic.

3rd: The high temperature in nearly all of those attacked.

4th: The high incidence of infection among the attendants, compared to the small per cent. of inmates infected.

5th: The high mortality among the inmates compared to the low mortality among the employees.

6th: A fact not previously mentioned, that only ten colored patients were infected, although the negro inmates compose over a third of our total population. There were no deaths among the negroes.

In conclusion, we wish to acknowledge our indebtedness to Dr. T. W. Evans, a member of our staff, for the very great assistance he has rendered us in preparing this paper.

TWO CASES OF TRACHOMA IN NATIVE-BORN LOUISIANIANS.*

By T. J. DIMITRY, M. D., New Orleans.

I wish to present this evening two cases of trachoma in native-born Louisianians. I think this disease is progressing in this state, and that we are finding more and more cases. Ophthalmology has made but little progress in the treatment of trachoma. We lack a knowledge of its etiology. If you find the cases after

*Presented at the Clinical Meeting held by the Orleans Parish Medical Society in the Amphitheatre of the Charity Hospital, New Orleans, January 24, 1916. [Received for Publication March 9, 1916.—Eds.]

the destructive work has been done, the diagnosis is easy. The disease produces scar-tissue in the lids and blinking irritates the cornea and vessels rush in to protect the irritated cornea. The early diagnosis is difficult. These cases are a few of those that have been treated by my method, and the success which my assistants, Drs. Larose and Dunn, have had in these cases is nicely shown. I think we cure trachoma, as every case is being discharged as cured.

In the first case here presented, the patient has had the disease since eight years of age. The second case has not had the disease so long, and is perhaps in better condition. We are trying to keep immigrants out of this country who have the disease, but we are not making the proper efforts to keep the disease from spreading in our own country. You have all heard of the treatment by silver nitrate and copper sulphate, which only produces more scar-tissue in a disease which is already a scar-tissue disease. This method of treatment makes the lids as soft as wet leather. The disease is readily and easily cured in this mechanical way by expressing the follicles. (*Technic shown on patients.*)

Bohlt has written a great deal on the subject of trachoma. In our section we have two per cent. of such cases, while in New York every other case is one of trachoma. I think we are not watchful enough in this vicinity, or there would be a greater increase, especially in the asylums.

The early sign of the disease is that of an acute conjunctivitis, like pink eye, but of a chronic type, and in spite of all we can do, the disease progresses, unless something is done to express these follicles. The technic is as follows: A metal stick is wrapped with cotton, cocain is instilled in the eye, and the conjunctiva of the tarsus is massaged. The cotton probe is put under the tarsus and pressure is made as shown. The follicles are pressed out, this done every other day. If the conjunctiva is denuded, wait for several days.

A CASE OF BILATERAL COLONIC PYELITIS.*

By H. W. E. WALTHER, M. D., New Orleans.

This is a case of bilateral pyelitis caused by the *B. coli communis*. The patient entered the hospital complaining of frequency of urination accompanied by *ardor urinae*. Physical examination and history show a male, single, aged 45, gardener by occupation. The past history reveals nothing of note. Had a Neisserian infection thirteen years ago without complications; was operated upon for left hydrocele eight years ago.

His present trouble started two days before admission to Dr. Joseph Hume's service, which was on December 22, 1915. He was forced to void urine every fifteen minutes, day and night, and each urination was accompanied by intense burning. He suffered pain in both lumbar regions and had 104° F. fever. The marked frequency and urgency simulated urinary tuberculosis. Patient states that five years ago he had an attack similar to this one while in the Minneapolis City Hospital, attack at that time lasting one month.

General examination was negative except that upon palpation over kidney regions some tenderness was experienced by patient, tenderness more marked over right kidney. Neither kidney palpable. Genitalia negative externally, seminal vesicles not palpable per rectum, but prostate was somewhat enlarged and tender, and the prostatic secretion showed a fair number of pus-cells and *B. coli communis*.

A specimen of the mixed (bladder) urine showed a trace of albumin, no sugar, no casts, many pus-cells, many Gram-negative bacilli, and no red blood cells. No acid-fast bacilli found.

X-ray examinations of the entire urinary tract upon two different occasions were reported negative for calculus.

Phenolsulphonephthalein, 6 mg., intravenously administered showed:

First hour	150 c.c urine.....	56% phthalein
Second hour	50 c.c. urine.....	5% phthalein
Total output	200 c.c. urine.....	61% phthalein

I did cystoscopy and double ureteral catheterization after first producing anesthesia locally to posterior urethra and bladder

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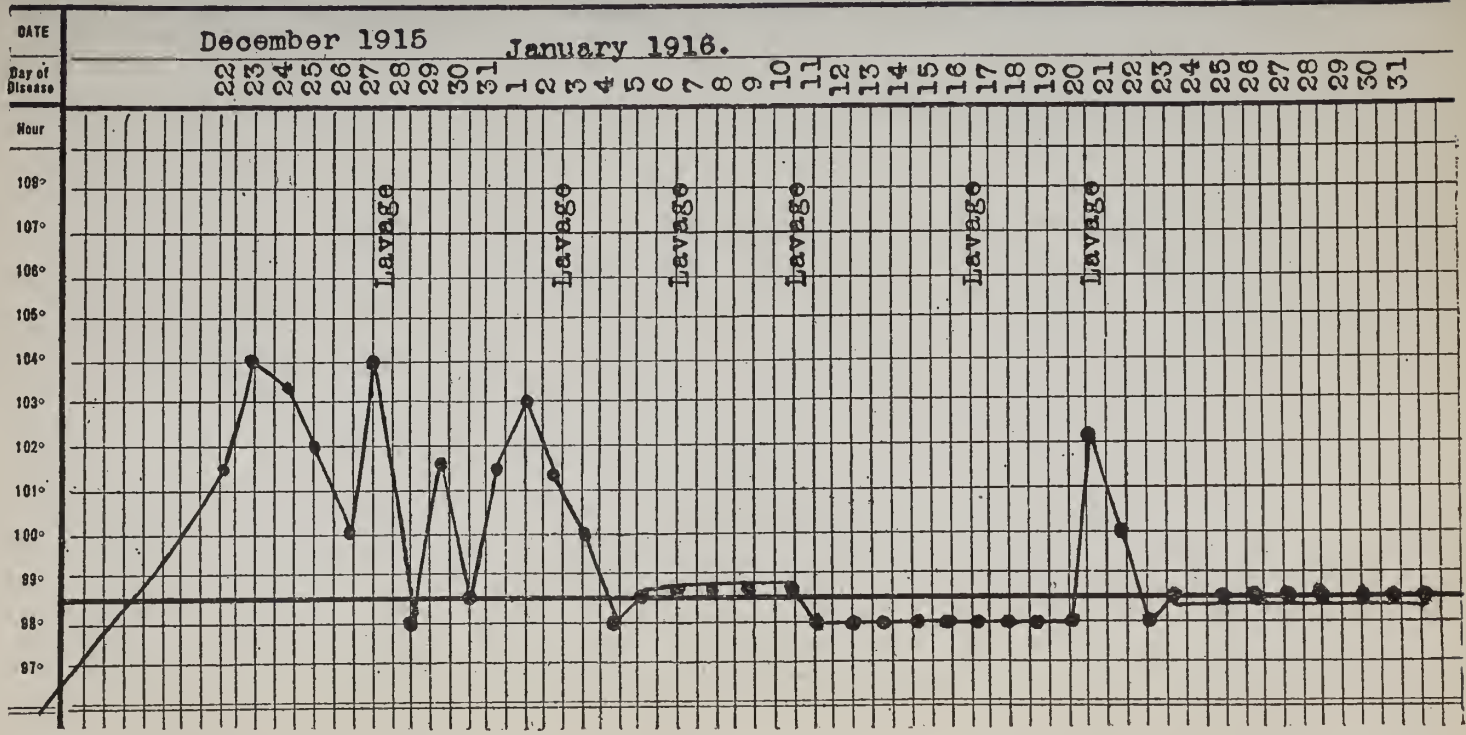
NAME Frank Gavan Admitted 12/22 191 5. Division. Ward 2



(which were highly inflamed) with two ounces of a half per cent alypin solution, this solution being left in the bladder for half an hour before instrumentation as advocated by Braun. Cystoscopy showed a somewhat inflamed bladder, the trigone and the area of mucosa around the ureteral ostia being more deeply injected than normal. At other spots the mucosa appeared dull and dark red in color especially at bladder neck, which bled upon touch. No obstruction was met to ureter catheters on either side; catheters being put up to kidneys. Many pus-cells and many *B. coli communis* were demonstrated from both kidneys, the infection being a little more severe in the right kidney. Pelvic capacity of left kidney, 5 c.c.; capacity of right kidney, 15 cc. Both renal pelves were lavaged at this time with a one-fifth per cent. silver nitrate solution.

Within a few hours following this first lavage the fever dropped to normal and all pain in the sides disappeared. Frequency persisted still. After four days fever again rose to 104° F., and again lavage was performed, this time using one-half per cent. solution of silver nitrate. Patient had a normal temperature following this which lasted two weeks, he receiving four more pelvic lavages in the interim. Again the fever rose to 102° F., and lavage again brought it down to normal, where it has remained until now. The left kidney is now free from organisms and pus and the right kidney has but a few pus cells and organisms.

I am unable to explain the rise in temperature after fourteen days of normal temperature other than that I suspect that at the time this rise occurred the patient suffered from a ureteral block. I intend to prove or disprove this by a pyelogram. Keyes is of the belief that every renal colic accompanied by a rise in temperature is indicative of acute stoppage of the ureter and the cause of this stoppage is usually a small stone, a slight kink, thick clump of pus, or a ureteral stricture.

This patient received in all six lavage treatments to date; at each sitting the strength of the silver nitrate solution was increased, so that at the last lavage a two per cent. solution was employed. Geraghty uses as high as a five per cent. silver nitrate solution in the kidney, but we have never found the need in using so concentrated a solution, which cannot always be considered safe.

DISCUSSION.

Dr. Eustis—Do not these infections vary in virulence?

Dr. Walther—Unquestionably, yes. Infections with the **B. coli communis** in the kidney are the mildest and the most easily managed, while infections with the staphylococci or streptococci group require most energetic treatment and are, at times, very hard to cure by this technique of lavage alone.

Dr. Butterworth—What is the youngest age at which you can cystoscope these cases?

Dr. Walther—My experience with children has been limited. I have cystoscoped a girl of twelve years. Dr. Samuel Logan, of our staff, has mentioned a case to me in which he cystoscoped a boy of seven years.

Dr. Nix—What experience have you had with the various internal urinary antiseptics in pyelitis?

Dr. Walther—Internal urinary antiseptics have a limited use in kidney infections. Urotropin is the only one I employ and then only in large doses, that is, fifteen to thirty grains in a glass of water every three hours. As urotropin at times produces hematuria, this must be watched for. The patient should be at rest in bed to derive the most from internal medication; the patient's urine must be rendered acid in reaction if any action whatever is desired from the urotropin. And even with all this, but little formalin will be liberated in the urine at the level of the kidneys. We know that the urine as it is excreted by the tubules of the kidney, coming from an alkaline blood, is usually alkaline and rarely becomes acid until it has reached the bladder. Therefore little action from the administration of internal urinary antiseptics can be hoped for in renal infections. As routine, however, they should be given, with the hope that they will do some good even though it be infinitesimal.

Dr. Larose—Would you cystoscope and do ureteral catheterization in the presence of a rise in temperature?

Dr. Walther—Yes, if the fever persisted and if the patient was suffering. Pelvic lavage will reduce the temperature and the renal pain in a few hours. I say pelvic lavage does it, but it is very likely that in many of these cases the mere passing of the ureteral catheter, thereby relieving the block to the outflow of urine, produces the desired result.

PRESENTATION OF CASES.

By DR. S. M. D. CLARK, New Orleans.

CASE 1.—PROFOUND ANEMIA FOLLOWING AN INCOMPLETE ABORTION WITH INFECTION:

I present this woman for reason of her profound anemia. If this is a simple, secondary anemia, it is the most profound that I have ever seen. The question is,—are we dealing with an atypical pernicious anemia, or a grave secondary anemia?

History: She had a three months' miscarriage about the first of the year, spontaneously passing the fetus, the sex of which was recognizable. She went to bed and continued to lose. After about a week of losing she called in a doctor who is supposed to have curetted her several times, with no check in the bleeding, she continuing to lose until the day of admission three weeks later.

When this woman came into the ward, we found that she had a very offensive vaginal discharge, suggesting infected retained material. Furthermore, her blood picture showed hemoglobin 15%, total reds 965,000, whites 4,340, and polys 88.

Without an anesthetic, sponge forceps were inserted into the uterus and a large quantity of decomposing placental tissue was removed. The uterus was packed with an iodine gauze wick, which was removed in twenty-four hours. Since this time, from a local standpoint, she has cleared.

Had I been sure of this being a secondary anemia, transfusion would have been ideal, but since there was a doubt, transfusion had to be held in reserve.

She was given cacodylate of soda, hypodermatically, grain one, in combination with Blaud's pills, going as high as forty-five grains a day. In the past two weeks this woman has made tremendous progress. She is ravenously hungry, and eats everything given her.

BLOOD PICTURE.

1/20/16—Hem. 15%; reds 965,000; whites 4,340; polys 88.

1/22/16—Hem. 15-20%; reds 1,185,000.

1/24/16—Hem. 15%; reds 1,215,000; whites 6,944; polys 78. Nucleated red cells found.

2/ 5/16—Hem. 15%; reds 1,315,000; whites 6,249; polys 76. Nucleated reds 4 to differential count of 100.

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2/12/16—Hem. 30%; reds 1,765,000.
2/19/16—Hem. 50%; reds 3,180,000.
1/26/16—Widal negative.
2/ 6/16—Stools: No ova found.

So one can see the marvelous transformation in this woman's blood picture, having when she came in a hemoglobin count of 15%; reds 965,000; whites 4,340; and now a hemoglobin count of 50%; reds of 3,180,000. What especially interests us, is this a permanent improvement, or are we dealing with a temporary improvement that so frequently occurs in pernicious anemia?

CASE 2.—PRURITUS VULVAE ASSOCIATED WITH DIABETES:

This was one of the most extensive types of pruritus vulvæ that I have ever seen. When she came into the service, there was an erythematous area extending from the umbilicus down on the lower half of the abdomen to the vulva, and down both thighs as far as the knees. The skin was edematous, the vulva was leathery and cracked in numerous areas. The vagina was acutely inflamed, with an irritating discharge coming down from the cervix. Urine showed 2/5% sugar. She was placed upon a constitutional and local treatment. Constitutional: the *Allen Antidiabetic Treatment.* Local: She was given hot Sitz baths several times a day, remaining in this water for thirty minutes to an hour. After coming from the bath, the following lotion was applied to the involved area:

Magnesium Carbonate	
Zinc Oxide	
Calamine	aa. iii
Menthol	gr. i
Rose Water	oz. vi

M. and Sig. Apply.

Furthermore, the following was given as a douche, twice daily:

Boracic Acid	oz. xxiv
Anhydrous Zinc Sulphate	oz. iv
Menthol	gr. v

Heaping tablespoonful to one gallon hot water as douche.

After acute symptoms subsided, a 5% ichthyol ointment was substituted for the calamine lotion.

After about a week of this antidiabetic treatment, the sugar disappeared and, as you see now, there has been a marvelous

transformation in her condition. She is entirely free from all itching, and one would not be able to realize that these structures had been in so aggravated a state if he had not witnessed them as did we when she first entered the service.

As you will see, this woman has a very large, pendulous abdomen, for which she has been ordered an abdominal support.

She has been out of the hospital for several weeks, since which time Dr. Elliott has been kind enough to keep in touch with her diabetic phase, and he has failed to find sugar at any time. The outcome in this case has been most delightful.

CASE 3.—RETROPERITONEAL, PUERPERAL, SUPPURATIVE INFECTION:

This case beautifully demonstrates the retroperitoneal route of infection often found in puerperal cases, but which I do not believe is fully appreciated by the profession in general. We know that the lymphatic supply of the cervix is exceedingly abundant, therefore the great importance of having a sacred regard for asepsis in this region, especially since we know that in every delivery there is some breach of surface within this area.

Many of these cases are curetted, believing that the offending material is within the fundus of the uterus, whereas nothing could be more erroneous, since the organism has already far removed itself from the interior of the uterus and is at a distal point in the base of the broad ligament.

History: She has been having pain in abdomen, especially left side, and chills and fever since the birth of last child, October 13, 1915. Confined to bed since delivery.

This woman was kept in bed on the rest plan of treatment a week or ten days, hoping that this infection would end by resolution rather than suppuration. When it did not so do, we believed that we were dealing with a suppurating focus, which would have to be drained. On examination I was convinced that we were dealing ith a retroperitoneal type, but which could not be drained from below, since it pointed far out into the iliac fossa.

In order to confirm my belief and to exonerate the possibility of tubal involvement, I made a median incision and there found a perfectly normal genital apparatus. This median incision was then closed and an extraperitoneal incision was made, just within the crest of the ileum and my finger tunneled down to the focus of suppuration. This woman made a very rapid recovery after this drainage.

Her blood picture before operation was total whites of 16,600, with polys of 83; ten days after operation it showed whites of 6,100 with polys of 52.

This condition is what we know as a true pelvic abscess; in other words, a connective tissue abscess, and, when drained, heals just as an ordinary abscess in the thigh. Whereas, in the pseudo pelvic abscess having the fallopian tube as a primary focus of infection, healing is not near so satisfactory, owing to the infected mucosa of the fallopian tube. In the true pelvic abscess, a woman can conceive several months afterwards, and go through normal gestation. On the other hand, in the pseudo pelvic abscess, the adnexa as a rule are so thoroughly diseased that conception does not take place.

CASE 4.—PUERPERAL INFECTION WITH COMPLETE PERINEAL LACERATION FOLLOWING INSTRUMENTAL DELIVERY, COMPLICATED BY A CHRONIC CYSTITIS AND VIRULENT PYELITIS.

History: She was delivered with high forceps Aug. 28, 1915, since which time has been having incontinence of urine and feces. In bed with continuous temperature since delivery.

When this woman came into the service, she was in a very feeble, emaciated state, having little or no fluids within her tissues. She was put upon proctoclysis of glucose and sodium bicarbonate and given liquids freely by mouth. Urine report showed numerous pus-cells, and colon bacillus.

About a week after being in the service she developed very high temperature, which proved to be a double *B. Coli* pyelitis. Dr. Gelpi has vigorously lavaged both kidneys and, though after a rather stormy course, she is now running a normal temperature with a sterile urine on one side.

Lavage 1/5000 silver nitrate instituted at following intervals:

Dec. 26, 1915.....Dec. 27

Dec. 28 P. S. T.

1st hr. 40 cc. 50%
2nd hr. 26 cc. 20%

70% for 2 hrs.

Dec. 29, Lavage. Cultures still show B. Coli.

Dec. 30, Lavage.

P. S. T.

1st hr. right 27 cc 25%	1st hr. left 20 cc 20%
2nd hr. right 26 cc 15%	2nd hr. left 14 cc 5%
Right 40%	Left 25%

Total 65%

Jan. 6, 1916 Lavage.
Jan. 8, Lavage. Cultures still show **B. Coli.**
Jan. 10, X-ray negative.
Jan. 18, Lavage. Cultures still show **B. Coli.**
Jan. 31, Lavage.
Feb. 2, Lavage. Feb. 4, Cultures right side sterile.
Feb. 5, 10, 16, 23, lavaged left kidney with one-half of 1% silver nitrate.

Examination of blood reveals the following:

Dec. 19, 1915—Hem. 85%; whites 14,400; polys 86.
Dec. 22—Reds 3,300,000.
Dec. 26—Whites 31,916; polys 87.
Dec. 27—Hem. 75%; whites 12,100; polys 73.
Dec. 29—Whites 10,400; polys 54.
Dec. 30—Whites 18,200; polys 61.
Jan. 4, 1916—Whites 15,500; polys 75.
Wassermann strongly positive (both tests).

So, in this case, we have had many things to contend with, and it looks now that we will soon be in a position to handle her incontinence of feces and urine.

CASE 5.—TWISTED UTERINE MYOMA UNDERGOING NECROBIOSIS:

History: While conscious of the tumor in her abdomen for the past 4 years, no trouble whatsoever until about Dec. 26, 1915, when she was taken with severe pain in lower abdomen, becoming distended and had to go to bed with fever. However, had had menorrhagia and metrorrhagia.

When admitted to the service she had temperature 100½° and also had a rather severe cough. She was kept in bed 21 days, hoping for this pulmonary condition to clear up, and at the same time she was constitutionally treated, looking towards placing her in a better condition to undergo the surgical intervention. Temperature never did come down to perfectly normal. However, it was decided to remove the tumor.

On entering the abdomen, a very beautiful specimen was revealed. First, there was a perfect hooding over of this whole tumor by the omentum, which was beginning to become organized to the tumor. Omentum was detached without great difficulty, bringing the tumor into view, which, you see here, is of a dark, mottled gray. On further investigation, it was found that this tumor had undergone a complete rotation with the resulting twisted pedicle. There were other tumors present, but of no interest, and the operation was one easily performed.

It is interesting here to see nature's process of handling these twisted, pedunculated fibroids, and I think there is every reason to believe that in this case, had we not have gone to the rescue, nature would in time have taken care of this tumor by establishing a new circulation through the omentum, and we would have, at a later date, found a "wandering" or detached myoma.

CASE 6.—TUBERCULAR SALPINGITIS:

This specimen is shown not so much from its rarity, but more for the opportunity it gives me in calling attention to the frequency of tuberculosis of the fallopian tubes. Prior to our routine, dual examination of all specimens, the frequency in our service of tubercular salpingitis was far below that reported from some of the best organized clinics. Since this systematic investigation of all adnexal disease has been inaugurated, we have seen our statistics markedly change and now find our data in keeping with the high percentage of tuberculosis in salpingitis reported from other clinics. Unless systematic investigation is made of all adnexal inflammations, many a case will be looked upon as an ordinary pus infection, whereas upon microscopical inspection, might prove to be tubercular.

CASE 7.—EXSTROPHY OF THE BLADDER, WITH LEFT URETERAL STONE, HYDROURETER, PYONEPHROSIS, TRANSPLANTATION OF RIGHT URETER INTO THE LOWER SIGMOID, DEATH FIVE WEEKS AFTER OPERATION.

Having mentioned these successes, I now wish to record a failure.

History: White female 25 years of age, married 5 months. Since birth has been afflicted with an exstrophy of the bladder. Comes in complaining of pain in left side.

She had been operated upon at least fifteen times, having obtained as a reward only a skin covering to the exstrophy, but which in no way relieved the woman, except enabled her to wear a urinal down the thigh.

I was stimulated to operate in this case by the excellent results obtained by Dr. C. H. Mayo in transplanting one ureter at a time, thus dividing the operation into a two-stage sitting. The gravity of the situation was explained to the woman, and on December 4, 1915, I operated. There was no difficulty encountered in the Coffey technique of transplanting this right ureter in the junction of the upper rectum and lower sigmoid. This

right kidney fluctuated copiously, but after a stormy course of five weeks, she succumbed.

Through the activity and kindness of Dr. Gallant, we were successful in securing a partial autopsy, and I wish to present these very interesting specimens. As you will see, instead of having a sound left kidney, the essential fundamental of the whole plan of procedure, we were dealing with practically a functionless kidney. Here you will see a kidney honeycombed with abscesses, with a large ureteral stone, lodged at the lower third of the ureter with an associated hydroureter.

The mistake made was in believing that this kidney was in relatively good condition and that the pain in this woman was due to the salpingitis resulting from a Neisserian infection as was proven at operation. An X-ray picture should have been taken to rule out the possibility of any mechanical interference with the urine, and though it is a very difficult procedure, in the future it will be my effort to test out the capacity of each kidney before operating.

As you will see, the right kidney is in very good condition. There is evidence of a mild pyelitis, but the kidney amply able to carry on its function. The specimen of the junction of the ureter to the lower sigmoid is perfect and we could not have a more satisfactory joint. Furthermore, at autopsy, there was evidence of a retroperitoneal infection, which took its origin from the point where the posterior peritoneum was incised in order to get out the ureter to make the anastomosis.

Therefore, one can see that this was not a suitable case for the application of this technique, for the one vital point is that in dividing the operation into two stages, the one kidney that is not disturbed carries on the burden of the work, while the other that has been transplanted is immunizing itself against infection.

Instead of having a good left kidney, there was a dead one, and the whole work was thrown on this right kidney. The toxemia from this pyonephrosis on the left side, in combination with the retroperitoneal infection, proved too much for the woman's resistance, especially since these cases have a very low margin of reserve as evidenced in their lives, they rarely ever going beyond thirty-two years.

Should I come in touch with a similar case in the future, I will insert three small rubber dams at the incision of the posterior

peritoneum, near the junction of the ureter and sigmoid, and believe that this will lessen the chances of the retroperitoneal infection.

A CASE OF SYPHILIS, WITH SECONDARY INVOLVEMENT OF HEART AND KIDNEYS.*

By ALLAN EUSTIS, M. D., New Orleans.

The case which I take pleasure in presenting before you this evening is one of syphilis, with secondary involvement of heart and kidneys. The patient, 12 years old, came to the hospital in a convulsion. Family history, negative; no history to account for syphilis. Three weeks ago, patient noticed sores on limb, and later swelling of lids and ankles, and later convulsions with a duration of about five minutes. Among the other symptoms noticed were chills, nausea, coma, and general edema of both lungs, a presystolic murmur, ascites, anasarca. On examination, urine showed 15% of albumen by Purdy method; first diagnosis made was one of uremia and endocarditis. According to text-books, one would restrict fluids, but we did just the contrary, as toxemia was the dominating factor in the case. Following the administration of large amount of fluid and hot packs, in forty-eight hours patient was past the danger of uremia, and was then put on digitalis, sodium citrate, continuing large amount of fluid. One and a half weeks later, there was no coma or anasarca, and patient was later put on mixed treatment.

To-day patient is well, and urine is normal. Phenolphthalein test two days ago showed 55% the first hour, and 5% the second hour. The kidneys were rested by keeping him on a low proteid diet. The text-book treatment of this case would be to decrease the fluid intake. The point in this case is that the patient was practically dying because of poor elimination, and the best way to increase the elimination was to give large quantities of fluid. Another point is that we should, in these cases, take advantage of the eliminating power of the skin, although the elimination in this way of normal individuals is practically nil, when the other channels of elimination are practically blocked, elimination by the skin is greatly increased. The sweat of some of these patients has an odor of urine.

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DISLOCATION OF THE TEMPORO-MAXILLARY INTERARTICULAR FIBRO-CARTILAGE.*

By JOHN TOLSON O'FERRALL, M. D., New Orleans.

The above subject, and the case illustrating the condition, is brought before you to-night because of its extreme interest and its rarity, demonstrated by a search of the literature and the author's experience. It seems pertinent in treating of this cartilaginous dislocation to first give a short description of the temporo-maxillary articulation.

All are quite familiar with this as a ginglymo-arthrodial or hinge joint which possesses a gliding movement. The parts entering into its formation on each side are, above, the anterior part of the glenoid cavity of the temporal bone and the eminentia articularis; and, below, the condyle of the inferior maxilla. The ligaments are as follows: External and internal lateral; stylo-mandibular and capsular ligaments, in addition to which the interarticular fibro-cartilage should be mentioned. This last structure is a thin plate of cartilage of an oval form placed horizontally between the condyle of the jaw and the glenoid cavity. Its upper surface is convex antero-posteriorly and laterally and its under surface is concave, which allows its accurate relationship to the glenoid cavity and the condyle. Its circumference is attached to the capsular ligament and in front to the tendon of the external pterygoid muscle. It is thicker at its circumference, especially behind, than at its center. It divides the joint into two cavities, each of which is furnished with a separate synovial membrane.

The synovial membranes, two in number, are placed one above and the other below the fibro-cartilage. The upper one, the larger and looser of the two, is continued from the margin of the cartilage covering the glenoid cavity and eminentia articularis onto the upper surface of the fibro-cartilage. The lower one passes from the under surface of the fibro-cartilage to the neck of the condyle of the jaw. The interarticular cartilage is sometime perforated in the center; the two synovial sacs then communicate with each other.

The nerves of this joint are derived from the auriculo-temporal and masseteric branches of the inferior maxillary branch of

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the trifacial. This supplies the parts concerned with both motor and sensory nerves. In addition to this the chorda tympani comes from the cavity of the tympanum through a foramen at the inner side of the Gasserian fissure. It then meets the gustatory nerve and accompanies it to the submaxillary gland and the tongue on that side. In the glenoid fossa it is in very close relationship with the fibro-cartilage and supplies other salivary glands.

The lower jaw is drawn forward by the combined action of the external pterygoid and the superficial fibers of the masseter simultaneously. The grinding movement is caused by the alternate action of the external pterygoids.

It is easily seen from this description the possibilities for the dislocation of this cartilage and just what causes it. It is a fairly loosely constructed gliding hinge joint with a capsule large and loose, especially in its upper part, which seldom tears and which stretches easily. The tendon of the external pterygoid is so attached to the cartilage that it is readily pulled forward if the capsule is stretched, and when such a thing happens the thickened posterior circumference of the disc-like cartilage acts as a mechanical wedge. In the case which I have seen and will report further in the paper, the above pulling forward of the cartilage has happened after the capsule had been stretched. In all reported cases the condition has occurred after the jaws have been separated very widely, as in extracting molar teeth, attempting to put very large articles in the mouth, as whole apples, etc. It is essentially mechanical.

The differential diagnosis is readily established from true dislocation of the jaw by the fact that in the latter condition the jaws remain opened widely, if bilateral, and partially if unilateral, and it is impossible for the patient to close them. In the dislocation of the cartilage the jaws are entirely closed and remain locked. In the dislocated jaw the chin is distinctly pulled to one side, whereas when the cartilage alone is dislocated the irregularity of the chin or jaw is shown only slightly and when an attempt is made to separate the jaws. The history in these cases is rather clean-cut and is of especial significance in making a diagnosis.

It is of great interest to note how infrequently the condition occurs, as one would conclude from the reference to same in the

text-books and the few cases reported in the current literature, a careful search of which reveals only three cases and an equal number of text-book references. In all instances the authors refer to the condition occurring most frequently in young adults, especially delicate young women; probably because of the greater dental work done at that time, in connection with greater use of the jaws and the elasticity of the capsule at that age.

The dislocation when well established often frequently recurs, necessitating repeated manipulation, often done by the patient himself, or operative interference is required.

The symptoms occasioned, quite definite and characteristic, are of sudden onset. The patient first complains of the inability to separate the jaws, which attempt produces pain, usually in the region of the middle ear and the temporo-maxillary joint; the degree of pain varying with the traumatism of the joint itself and the surrounding structures. This pain is referable to the irritation of the chorda tympani and the temporo-maxillary and auricular branches of the trifacial, which also accounts for the dribbling of saliva, the peripheral stimulation affecting the submaxillary and other salivary glands, previously referred to in the description of the joint. Upon attempted forced separation of the jaws the pain is further referred to the entire half of the tongue on the injured side, due to the coming together of the chorda-tympani and the gustatory nerve, and greatly increased pain in the face, ear and joint. The lateral motion of the jaw is greatly limited, and especially so in the direction away from the affected side. It is interesting to note also the tremor of the tongue and the sensation of a constant pulling in the tongue as a result of the pressure stimuli. The patient experiences great discomfort because of the forced unsanitary condition of the mouth, inability to partake of any foods except liquids and those by means of a tube, either by nose or mouth. The mental symptoms produced are manifested generally as a fear, and even after the dislocation has been reduced the patient will open the mouth with great caution because of the persistent fear of a recurrence.

The treatment, fortunately, is very simple and consists in trying the simplest measures first, i. e., complete rest. This can hardly be expected to reduce the dislocation, but often in partial dislocations this gives the parts opportunity to contract and relieve the condition. I mean by this absolute rest, without the

slightest effort to separate the jaws. If this fails, manipulation of the joint under ether completely reduces the dislocation, after which the jaw is held in complete fixation by means of a Barton bandage, the patient being fed by a tube and instructed not to attempt any separation of the jaws. This fixation should be absolute for at least one week, after which time the bandages are removed. If the patient can separate the jaws even a very little painlessly, we are quite sure of a reduction, and the fixation is again pursued for another week. At the end of this time hydrotherapy is instituted and the patient allowed to exercise the joint very carefully by his own efforts and by eating soft foods. The feeling of fear is soon overcome once the patient is assured there will be no recurrence, and the progress is then satisfactory. The patient should be warned not to eat tough, hard foods or attempt to widely separate the jaws for at least one month.

In handling such cases as this it is interesting to know just what the normal occlusion of the teeth is and what the full separation of the incisor teeth is. This former point is best determined by the facets on the several aspects of the teeth and the knowledge of the patient's dentist, which is by far the most reliable information one can get. It is seldom, however, that anyone will be found who happens to have observed the average distance between the central incisors when the jaws are fully separated. I have found by a fair number of actual measurements that the average aperture is about one and one-quarter inches, an average large mouth being as much as one and three-quarter inches.

In case of recurrence in such conditions, operative interference is definitely required and is easily accomplished. The operation devised by Annandale is probably the most practical and does not mutilate the patient. The procedure is as follows: An incision slightly curved, 3/4 inch in length, is made over the posterior margin of the lateral ligament of the joint and is carried down to the capsule. Small bleeding points having been secured, the capsule is opened and the cartilage seized and drawn into place; it is then secured to the periosteum and other soft tissues at the outer margin of the articulation by a cat-gut suture. The incision is then closed in the ordinary way. Annandale in his paper reports two successful cases.

The remarks of the authors reporting cases, with the reports,

are given rather fully because of the rarity of the cases and the clearness of the articles. Annandale in the *Lancet,* February 26, 1887, vol. 1, p. 411, gives us the benefit of the following:—

That proper movements of the temporo-maxillary joint may be interfered with by conditions inside the joint is a fact recognized by all surgical authorities. That a displacement of the interarticular cartilage—the subluxation of Sir Ashley Cooper—may be one of these conditions is also recognized. Heath (*Injuries and Diseases of the Jaws,* third edition, p. 415) says: "It is an affection occurring principally in delicate women and has been thought to depend upon relaxation of the ligaments of the joint, permitting a too free movement of the bone and possibly a slipping of the interarticular cartilage."

Annandale agrees with Heath, but feels further that, as in the case of the semi-lunar cartilage of the knee, the interarticular cartilage of the temporo-maxillary joint may become displaced either from a sudden tearing of their connections or from a gradual stretching of them. His typical case is as follows:

"Mary McC., age 38. Admitted to hospital in March, 1886. Nine years before her admission injured her temporo-maxillary joints during an attack of vomiting. The joints remained locked for a few minutes but after a little manipulation she put the condition right herself. Ever since this time she suffered great discomfort in the left joint, for whenever any extra movements of the jaws was mad the joint became fixed and remained so until she had practiced some manipulations, then movement was restored. Frequently, also, when she attempted to open her mouth she found she could only do so to a limited extent, but by using the manipulations the proper separation of the jaws was completed.

On March 12 the operation described above was performed and the cartilage found to be loosened from its attachments and more movable than usual. It was fixed as above described and the patient left the hospital in thirteen days completely relieved."

Henry Lee (*Lancet,* 1890, vol. 1, page 17) cites the following case:

A young gentleman 4 years old fell 20 feet out of a window in the year 1883. His under lip was badly cut and some teeth so loosened that they had to be removed. A competent surgeon examined him at the time and reported no fracture and that the jaws could be brought evenly together. Subsequently the submaxillary glands became very much enlarged and for many months there was a constant dribbling of saliva. He became subject to frequent attacks of ear-ache and deafness. In October he was examined by Lee who found the dribbling still existing and sub-maxillary gland

still swollen. The patient was only able to open the mouth to one-half the normal extent and all power of rotating the jaw was lost. A distinct depression could be felt at the place usually occupied by the cartilage of the left side. There was difficulty in pronouncing some words distinctly. The jaws came evenly together when shut.

Dr. Lee attributes the ear-ache, deafness, swelling of the submaxillary gland and dribbling of saliva to irritation of the chorda tympani and its union with the gustatory nerve. It has been experimentally proved that stimulation of the chorda tympani produces dilatation of the blood vessels of a salivary gland and a flow of saliva (*Foster's Physiology*, fourth edition, p. 259). The movements of the condyles of the lower jaw by means of the inter-articular cartilage are very extensive. It may be carried in all directions and, in masticating, a rotary motion is performed and, when the jaw is much depressed, the condyle comes forward out of the glenoid cavity, bringing with it the inter-articular cartilage. In the case recorded none of these movements could take place; the lower jaw was in only one plane, and that to a limited extent. That this was a real dislocation of the cartilage is proved by the depression which could be felt in the natural site of the cartilage and by the corresponding symptoms. There is no record of operation.

The case which I wish to report is as follows:

Miss L. W., age 28. The family history contains nothing of importance. Her past history has no record of illness of note and previous joint trouble is denied. The young lady was seen at my office October 25, 1915. Since June of the same year she had suffered pain in the region of the left wisdom tooth. A radiograph was made by her dentist which revealed a badly impacted lower molar tooth and which accounted for her pain. Three weeks previous to her visit to my office the molar was removed without difficulty under local anesthesia, but it required very wide separation of the jaws and the usual amount of force required to remove a tooth. The dentist, who is very expert in every branch of his work, was not conscious of using any unusual force or pressure in removing this tooth. The patient closed her mouth as usual after the operation and went immediately home. Soon after her arrival there she found that she was unable to separate the jaws. She straightway informed her dentist and he advised forcible separation of the jaws. She attempted this but each time severe pains of a shooting character were produced in the ear, temporo-maxillary joint and along the left half of the tongue to its tip; this latter pain was accompanied by a quivering or spasm of the tongue and a sensation of draw-

ing along its entire left half. This was greatly increased by any attempt to separate the jaws, whether by force or simple muscular action, as, when attempting to talk. When at rest she was comfortable until the muscles were thoroughly relaxed by sleep when she would be awakened by the sudden, severe pain. Two weeks after extraction of the tooth she was able to separate the teeth nearly one-half inch but for the week previous to her consultation with me she could separate them barely one-eighth inch. Saliva was being secreted in large quantities and required the constant use of a basin for the patient. There was no marked enlargement of the glands.

Upon detailed examination it was immediately seen that the lateral motion of the lower jaw was equal to one-half normal on the affected side and scarcely none possible on the right side. It was possible for the patient to separate the jaws about one-eighth inch without pain, but any attempt at greater motion was associated with a great deal of pain, as just described. Upon digital examination of the buccal cavity on each side it was found that the space between the descending ramus of the lower jaw and the last upper tooth was much greater on the right than the left side. Upon palpating the temporo-maxillary joint externally it was found that the left was slightly more prominent than the right; there was decidedly no depression at that site.

A diagnosis of dislocation of the temporo-maxillary cartilage was made and ether manipulation advised after considering the length of time since the injury and the measures instituted before the patient was seen by me.

The patient continued to complain of the symptoms above described until manipulation was done October 29. As soon as surgical anesthesia was reached the jaws were separated to full extent without trouble, and they were completely dislocated *purposely* to insure the slipping back of the cartilage. No abnormality or muscle spasm was found. Normal apposition of the teeth was obtained and a Barton bandage applied. Her recovery from ether was uneventful and she was advised to attempt no movement of the jaw. She suffered no pain in the ear and other regions complained of previously, except for a slight persistent quiver of the tongue.

The bandage was removed in one week and the patient separated the teeth three-fourths of an inch without pain. She was not encouraged to do more and the bandage was reapplied. Two days later the bandage was again removed because of the patient's

insistence, and alternate hot and cold packs applied to the joint. She could then separate the teeth one inch painlessly, and upon her promise to be extremely careful the bandage was left off. She was instructed to exercise the jaws at frequent intervals and partake of very soft foods. Her progress was rapid and there was no return of the previous pains.

A recent report from the patient tells of no further trouble.

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SOME OBSERVATIONS ON THE OPERATIVE TREATMENT OF CRANIAL INJURIES.*

By CARROLL W. ALLEN, M. D., New Orleans, La.

That too frequently a harmful conservatism is practiced in the non-operative or expectant plan of treatment of cranial injuries has been my observation in some years past. The diagnosis of cranial fracture, or intracranial injury, unless marked, is not always easy, and the neglect of offering the benefit of operation to these milder cases may permit the development of pathological changes which may greatly affect the usefulness and well-being of the patient in later life, when such changes may have been greatly lessened or entirely removed by proper surgical intervention. I have contemplated for some years past the preparation of a more elaborate paper on this subject, but having been called upon on short notice to appear on this program, I have selected two cases from my histories which had been seen in conjunction with Dr. Van Wart and treated with him, and these two I will discuss with the Doctor to-night. The first was a young boy:

A. H., age 2 years. Patient of Dr. Chas. Gelbke. Seen by myself and Dr. Van Wart just after midnight August 6, 1915, shortly after

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admission to Hotel Dieu. Gave the following hsitory: The evening previous was playing with his father in the yard of their residence, the father tossing the child in the air and catching him in his arms; during one of these attempts the child slipped from his grasp and fell to the pavement, striking the left side of his head. There was no distinct period of unconsciousness, but the child seemed dazed for a short time, after which he seemed to be normal but complained of his head. In about two hours general convulsions developed without any other symptoms having occurred as far as the family had observed. These convulsions recurred at intervals which gradually became shorter and the convulsions more violent until he was brought to Hotel Dieu, where they were controlled with a general anesthetic. When seen on the operating table pulse was 152 and respirations 48. There seemed to be a slight flaccidity of the left arm and leg as compared to the right limbs. Pupils normal and equal. On the left side of the head over the parietal region there was very slight evidence of a contusion.

Concurring in Drs. Van Wart's and Gelbke's opinion that an operation should be done, the child was immediately prepared.

Operation.—Ether anesthesia by Dr. W. O. Callaway. Following Dr. Van Wart's advice, a large osteo-plastic flap was outlined over the right motor area. As the scalp was turned down and its margin reflected from the bone, it revealed a long irregular linear fracture which ran across the entire exposed field. The openings in the bone were so arranged as to utilize part of this fracture line in raising the bony flap. The flap was turned down in the usual manner and showed the underlying dura normal and intact; a linear opening was made through the dura across the length of the field for exploratory purposes.

The underlying parts were found normal. There was apparently no excess of cerebrospinal fluid and no blood anywhere, either beneath the bone or within the dura. Finding no other injury, the wound was closed with slight drainage, the dura having been sutured. The wonderful part of it was that the child, while having been for some time prior to the operation in a semi-comatose condition, with frequent convulsions, awoke thoroughly normal. Pulse was 150 when the operation was started, and 156 when we finished; the respirations were 48; temperature was practically normal, 99 and something. The operation was done about two-thirty in the morning. The next morning, the child refused to lie in bed and spent most of the day running around in his bed, with the mother chasing him from side to side; we could not keep him quiet. I have recently heard from the family that

the child is perfectly normal in every way and has done nicely. He left the hospital in a few days, and has had a practically uneventful recovery. I have avoided the discussion of the symptoms in this case, as I do not want to take a portion of the paper that would probably be of more interest coming from Dr. Van Wart.

Another case, that of Mr. A. S., age 35, a young man of good habits and good previous history, and not addicted to alcoholism. On November 24, he was at work as foreman of a large machine shop when an accident occurred and some of the wreckage struck him in the abdomen, throwing him back against some machinery. He was unconscious and carried to the Charity Hospital bleeding from both ears, and remained so for twenty-four hours. During this time his temperature was about 99°, pulse between 88 and 96, and respirations between 24 and 30. He was removed to the Touro next day, and Dr. Van Wart called in consultation. He had regained consciousness just upon being removed, but the period of unconsciousness was about twenty-five hours. We kept him under observation for two days. The bleeding at the ears stopped, and just over the right occipital region, two inches above and behind the mastoid process there was a small lacerated wound with no demonstrable fracture of the skull that we could determine by palpating with the finger. The symptoms that were particularly noticeable were a decided restriction of the visual field most marked on the right side; these were particularly studied by Dr. Van Wart; the patient not progressing as he should, the pulse gradually getting slower, from 88 directly after the injury to 60 and slightly less in two days, operative indications were positive.

On Dr. Van Wart's advice, the left occipital region was opened just above the lateral sinus over the centers of vision, in that neighborhood, and we found as the bone was approached that there was a long line of fracture that ran up in this region, and curved forward in a somewhat peculiar manner towards the ear, terminating apparently above the ear somewhere. When the bone was exposed by a fairly large opening, large enough to operate through fairly successfully, we found the dura very much congested with both epidural and subdural hemorrhage, the brain very decidedly contused with considerable blood at this point. As it was evident that the line of fracture had traversed the lateral sinus, and blood was coming from there, it was impossible to attack the sinus; we provided, however, drainage, and closed the wound. The patient's progress was fairly satisfactory, and the visual field decidedly increased to nearly normal, about thirty to

forty per cent. increase. It was decided, however, two days later, on the 30th of November, to enter the other side of the head to make sure that there was not some mischief going on at that point. Accordingly, the wound was somewhat enlarged, and the bone opened at this point. Upon opening the bone, however, we recognized a line of fracture starting at this point of contusion, and just under the laceration in the scalp. The fracture could then be made out, and picking up the direction that we recognized the fracture having occupied on the opposite side of the skull, it was easy to trace the line of fracture from one side of the skull and up on the other. It had, however, produced most of its damage and injury on the opposite side to that at which the blow was delivered, and not at the point at which the scalp was lacerated. Beyond the fracture, we found nothing pathological that we could remedy. There was no blood, either epidural or subdural, and the parts were normal. The wound subsequently was closed, with superficial drainage to take care of the laceration in the scalp. His progress was uneventful and fairly rapid, the visual field increasing decidedly, and certain other sypmtoms, such as dizziness, etc., that he had, I have purposely omitted, as Dr. Van Wart will discuss them with you. These symptoms, such as dizziness, etc., that he had, I have purposely cember 24, I think, thoroughly normal, having been so for quite a while. Our object in keeping him there was that he did not realize, probably, the seriousness of his injury, and his employers were very anxious that he be entirely restored to his normal condition, if such were possible.

From many such observations as the above, I am convinced that the supposed conservatism in cranial injuries is often a radical method of procedure, and that many otherwise able surgeons who would not hesitate to operate on suspicion frequently neglect the cranial cavities, and therefore are less able to take care of effusions where the observation is often uncertain and incomplete. Among the data that I have gathered for use at some other time from large hospitals, and other surgeons with whom I have corresponded, there is over fifty per cent. of cranial injuries admitted in our large hospitals—it varies from 50 to 58% —that result fatally, and in 75 per cent. of all fractures of the vault—from 75 to 82 per cent.—there is always associated fracture of the base.

The pulse symptom that we have so often depended upon is unreliable, but it is always relatively faster in the more serious cases.

One of the opinions on this class of injury came from Dr. Cushing some time ago, in which he stated he was working out a series of observations (and at that time it had extended some four or six years). He then held the position that it was decidedly better to explore beneath the scalp all cases of suspected fracture, whether the point of fracture was determined or not, and at that time he was draining by the subtemporal method all cases of fracture of the base of the skull. He promised to give me his observations when I would call for them, and I hope to present these to you at some other time.

DISCUSSION.

DISCUSSION ON DR. ALLEN'S PAPER.

Dr. H. B. Gessner: I have been very much interested in these papers, and I think we have reason to thank the doctors for bringing this subject to our attention. There was one thing I didn't quite catch in the description given by Dr. Allen of the first case. As I remember it, the line of fracture was outlined as around the boundary of the flap. I do not understand what the cause of the convulsions was made out to be, or what particular action it was which relieved these symptoms. I would like the doctor, when he closes the discussion, to make that clear.

Dr. Jamison: We are told that a good many notes, especially some of them that came out recently, by a very distinguished surgeon, that where we have an injury of the skull, and there is no depression, but symptoms, there is an indication for operation, where there is a marked depression, whether there are symptoms or not, that we are to operate. Furthermore, if the patient stays unconscious for over twenty-four hours, I believe that we are supposed to operate. I would like to ask Dr. Allen if he agrees with that or not. Another question that was not clear, and that was, did that lesion occur on the opposite side—was it a lesion by contrecoup? Is that the idea? Another thing is this—is this a plea for decompression in all head injuries or is the idea only when there is hemorrhage to prevent this formation that Dr. Van Wart speaks of? As I can see it here, in that first case, there was no lesion evident at all. As I understand it from the symptoms, they probably operated with the idea of finding hemorrhage, or a spicula in that brain? Is that the idea? Now, I wanted to ask also if spinal puncture in this case would clear it up, whether there was hemorrhage or not, especially inside the dura?

Dr. C. W. Allen (closing): In answering Dr. Gessner's question

about outlining the edge of that fracture line or a portion of it for raising the osseous field, that is explained in this manner. When we raised up the edge of the scalp, we found a line of fracture running something like this through it; we then made trephine holes here, here and here (indicating), covering this point, and it fractured the bone across there, using it that way. (Illustrations).

Dr. H. B. Gessner: What was the lesion then? What was done to relieve the lesion?

Dr. Allen: Nothing except the drainage.

Dr. Gessner: What was there to drain?

Dr. Allen: That is something that is hard to say. We were somewhat perplexed ourselves at the improvement of the patient when the work apparently done was so little. There was absolutly no blood that we could determine anywhere. We could not explore the extreme limits of the line of fracture, because they ran beyond the field, but we had a wide-enough area to feel that we were not justified in going further.

Dr. Jamison: Would spinal puncture have done something?

Dr. Allen: Hardly; there did not seem to be any excess of cerebro-spinal fluid about the field. The dura was not under any great stress, and the brain beyond the dura seemed normal. Still we made a linear opening through the dura to make sure that there was no subdural pathology which might have evaded our examination through the dura. The dura was then closed up, edge to edge, and sutured.

Dr. Jamison: Is there any reason to think the operation benefited the patient?

Dr. Allen: The patient got well under treatment. As Dr. Van Wart very strikingly explains, the improvement of the case within ten hours after the receipt of the injury, and within eight hours after the first convulsion, the child had been operated on, and was now on the road to recovery. It had been in convulsions which were coming on every few minutes prior to the operation, and immediately after the operation, the child wanted something to eat. He was in a semi-conscious condition between these convulsions, but we could not keep the child in bed the next day. Every time I called there, he was running about in bed with his mother chasing him from one side to the other, and he played until he was ready for sleep. He left on the fifth or sixth day, I think, no, on the seventh day.

Dr. Gessner: I would like to ask Dr. Allen about this: if I understood you correctly, you sutured the dura when there was no decompression; was that necessary, there was no decompression?

Dr. Allen: Not as we understand it properly—

Dr. Gessner: In decompression, don't you leave the dura open?

Dr. Allen: It was not, strictly speaking, a decompression.

Dr. Gessner: Then it was no decompression at all?

Dr. Allen: Not directly.

Dr. Gessner: What did the drain drain out?

Dr. Allen: Serum for a few days. It was removed with the first dressing. There was a little serum, but nothing of consequence, hardly a noticeable amount on the dressings. It was put in there as a step for safety; that was not particularly indicated, as there seemed to be no excess of cerebrospinal fluid at the time of examination. It was not quite clear to us why the patient had shown such marked symptoms and had received such decided relief, from the operation, and confirmed in our opinions the idea of the necessity for immediate operation in these cases, an opinion that we both held, but it simply made the view more marked, both of us cooperating. About these symptoms, Dr. Van Wart may have something to say, as to why the patient had the symptoms that exhibited, and why the relief was so marked. It is rather unexplainable. There were some features that were not quite clear. The question that Dr. Jamison asked, what was that question—about the line of contrecoup?

Dr. Jamison: I asked you if it was caused by contrecoup.

Dr. Allen: I think that is the only explanation, that it was a fracture by contrecoup. We know that if we have a spherical body and a blow is delivered on one side, the lines of shock will travel around. However, the skull does not necessarily conform to all spherical bodies, because it is irregular in size, and thickness, and the fossæ often influence the line in which the contrecoup fracture would take place, and it is not necessarily always at an opposite point. As illustrated in our second case, if you reproduce here one mastoid process, and here is the other (illustrating), the line of fracture started there, and travelled down across the lateral sinus, which is about here, and the greater damage was done over on this side, not necessarily at a directly opposite point at all, because it traveled back around the other side of the head, but at this point there was decided contusion of the brain, and certainly there was bleeding from the lateral sinus because this line of fracture traveled across the lateral sinus on both sides. We discussed the advisability of doing something at the time of operation to the sinus but the condition was such it was safer not to interfere.

Dr. Gessner: You plugged it?

Dr. Allen: No, if we plugged the lateral sinus—we discussed that question when we had the patient's skull open, if we plugged it, how is the blood going to get out? It would have been a very easy matter to have plugged it, but we would then have caused a serious congestion, and edema of the brain that would have been more serious than if we had let the hemorrhage alone.

Dr. Gessner: Could it drain from the opposite side?

Dr. Allen: The blood coming in from in front, Doctor, has a very imperfect anastomosis; we would have had all this part of the lateral sinus that would not have been provided for.

Dr. Gessner: How can we obliterate an internal jugular on one

side completely? Does not the blood pass through the opposite internal jugular?

Dr. Allen: Yes, but you would have plugged that tract. We have this line of communication along here, if we plugged it here, we would have plugged that line of communication. It is a different thing to ligate the internal jugular and to plug the lateral sinus here, because in ligating the jugular, you have the uninterrupted sinus there. Now, about spinal puncture—yes, spinal puncture does show us blood, and we have blood-tinged fluid where there is bleeding within the cranial cavity, but very often the damage, as in the first case, is not one of hemorrhage, and still operative intervention is urgently demanded. I do not believe, had we not operated, from the way that child looked when I saw it, that it would have recovered. Or if it would have recovered it would have been in a badly handicapped and crippled manner. There was certainly no blood in the cerebrospinal fluid.

Now, about further injuries which the various members have asked, I think it is a good thing to remember in a general way the simple classification of cranial injuries, into, concussion, contusion, and laceration. Concussion is simply shock. It separates the nerve elements that communicate with each other for a short interval of time and produces unconsciousness, but the patient recovers without any macroscopic or microscopic indications whatever. They get up and walk about and are no worse for it, just as prize-fighters do, whereas contusion is a capillary laceration and the period of unconsciousness is always longer; I think that in cases where the period of unconsciousness is over a half hour, that we should regard it as serious contusian, and where there has been contusion of the brain, it has been of decided benefit to perform a drainage operation, or a decompression of some kind. In a laceration, of course, there is no question but what the indications are for operation. Again, a contusion, while less severe, may be of more consequence than a laceration, because we may have a contusion of the entire side of the brain, whereas a laceration may be but a frctional portion, a quarter or an eighth of an inch, but such a contusion may bring forth a far more serious injury.

COMMUNICATION.

LOUISIANA STATE BOARD OF MEDICAL EXAMINERS.

New Orleans, March 18, 1916.

Drs. Chassaignac and Dyer, Editors,
New Orleans Medical and Surgical Journal,
1551 Canal Street, New Orleans:

Dear Doctors—Noting the tendency of the various hospitals to employ trained nurses for the administration of anesthetics, I

deemed it advisable to obtain the opinion of our counsel as to whether this was permissible under the law.

I am enclosing herewith a copy of his letter defining the law on this point, which I request that you kindly publish for the benefit of those who are unintentionally violating same.

Thanking you in advance,

Yours very truly,

(Signed) E. L. LECKERT, *Secretary*.

E. L. Leckert, M. D.,
Secy. La. State Board of Medical Examiners.

Re Trained Nurses.

Dear Doctor:

I acknowledge receipt of your favor of the 15th March, 1916, inquiring as to whether the law permits a trained nurse, under the supervision of a physician, to administer anesthetics.

If the administration of an anesthetic is the "applying of a drug for the relief of bodily pain" it comes distinctly within the definition of medicine under the Medical Examiners' Law of this State. Under that statute, as you are aware, no person, not a certificated physician, can do any of the things included within the definition of the "practice of medicine." Such being the case, my opinion is that a trained nurse, even under the supervision of a physician present at the time, is not permitted under the law to administer an anesthetic.

Of course, the custom to the contrary in the several hospitals in this city does not excuse the violation of the law.

As to the manner of preventing the continued obedience to this custom, I feel sure that if the physicians were to be informed by you that they were subjecting the trained nurses employed by them to a prosecution for misdemeanor, such physicians would immediately refrain from jeopardizing the standing of such nurses.

As the trained nurse is required to remain in good standing and as a conviction for a violation of the Medical Law might seriously affect that good standing, a suggestion to the trained nurses themselves will probably bring about the desired result. Certainly, a suggestion to both of them should be all that is necessary.

Yours very truly,

(Signed) ERNEST T. FLORANCE.

N. O. Medical and Surgical Journal

Editorial Department.

CHAS. CHASSAIGNAC, M. D. ISADORE DYER, M. D.

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THE LOUISIANA STATE MEDICAL SOCIETY.

The date selected for the opening of the next meeting of the State Society was April 18. As this happened to be also the day of the general state election, the executive committee very wisely and for obvious reasons has postponed the date of the meeting to April 25, 26, and 27, in New Orleans.

The officers and committees of the society have been active and are preparing for a banner meeting, announcing "a feast, both scientifically and socially."

Every member should do his utmost to attend and contribute his mite to the success of the meeting. Because a member for any reason is not inclined or prepared to read a paper does not

make his presence less desirable. In fact, while the man who prepares a good practical or scientific paper deserves commendation, we believe the listener who takes a real interest in the proceedings, who discusses what is of interest to him or contributes to the interest of others, is just as deserving of credit.

We have expressed the opinion before that a meeting was more likely to have too many than too few papers, with the resulting effect that each writer is watching for his turn only, that a rush is made to try to keep up with the schedule and even valuable contributions receive scant attention. A few subjects well discussed from various angles and well assimilated would usually be productive of more good to the majority.

The man who—instead of announcing a paper, calculating the exact time he must reach the meeting to read said paper, then leaving for home as if there was nothing else of importance at that meeting—arrives on time, takes part in most meetings, mingles with his confreres, gets what he can out of the entertainments, contributes his ideas towards the betterment of things medical, does far more for the upbuilding of the society as well as the success of the meeting. This is not a reflection on the man who has something to say and prepares himself to say it as well as he can; he deserves great credit and we are glad to applaud him, but the Lord save us from the one who writes because he is asked or wants his name on the program—and has nothing to say.

So everybody come who can, those who want to read and those who want to listen; those who want to work and those who mostly want to play; but COME, that's the important thing, and try to induce the other fellow to do likewise.

We shall all profit, we shall all have a good time, to the glory of the officers and committees, to our own satisfaction and to the greater honor of the State Society.

VITAL STATISTICS IN LOUISIANA.

In January of the current year the Department of Commerce, through the Bureau of the Census, issued a tabular survey of the mortality in cities with less than 100,000 inhabitants; Louisiana was conspicuously absent from the list. Among Southern

States receiving notice were Alabama, Florida, Georgia, Maryland, North and South Carolinas, Kentucky, Tennessee, Texas, Virginia and West Virginia. Some of these are not registration states, but the cities are provided with local ordinances covering the mortality records.

Our State Board of Health has actively attacked this deplorable deficiency in many ways, without tangible result so far as public record is concerned. Every time, however, a federal summary is printed, attention is attracted to the failure on the part of local health officials in small cities to supply the information needed. It is obvious that a continued educational campaign is needed to bring about the results.

The State of Louisiana has been so distinguished in many pioneer activities for public health that it is almost anomalous for a mere matter of records to be overlooked or neglected. We have adverted to the fault in health officers' administration of such statistics, but it is by no means just to lay the whole blame at their door. The medical profession and the heads of the households are even more responsible.

At a conference of state health officials some months ago this very question received extended consideration and there was decided opinion prevalent that burial should not be permitted without formal registration of the death and with the accompanying formalities of the physician's certificate.

The indifference on the part of the average physician is probably the explanation for the neglect of these regulations, and the neglect is the more widespread because the offender is not penalized.

The co-operation of the undertaker in the larger cities saves the physician by following up the matter until all of the required formalities are satisfied; in the smaller cities, and in the country, there is no such assistance and the enforcement of the physician's obligation is not maintained.

The element of pride in public health seems to have been relegated to the constituted officials and the average physician seems satisfied to rest content in his own atmosphere of restricted usefulness, forgetting that there are some duties of citizenship which appertain to his privilege as a physician.

A PRETENTIOUS PROGRAM.

The far-reaching possibilities of the government's usefulness in aiding public health is evidenced in a bill introduced in the House of Representatives by the Hon. William Kent, of California, and aimed at providing Federal aid in caring for indigent persons afflicted with tuberculosis.

The bill contemplates government aid to state authorities in making provision in hospitals or sanatoria for such persons. The only restrictions or conditions laid down in the bill apply to systematic government inspection of the institutions and to the obligation of the state to supply an amount in funds equal to that afforded by the U. S. Government.

This is a step in the right direction, but we prophesy the defeat of the bill for the reason that there is not enough specificity in the detail. A much more practical approach to this particular question is that contemplated and suggested by some branches of the Public Health Service, by which stated localities shall establish government sanatoria for the tubercular, in which such persons may be properly segregated and cared for under the most enlightened and advanced methods of practise.

The scope of the Kent bill is too broad to be practical and, no matter how desirable, it may prove difficult of administration. Moreover, there is bound to be a continual controversy over the assignment of appropriations and this may lead to a nullification of its humane purpose.

The very purpose of such a bill, however, carries the encouraging hope that there are some legislators who are ready to recognize the need of provisions for the human being in the health program and the attack upon the White Plague is a signal victory for the public health propaganda.

Miscellany

The Government and the Malaria Problem.—Four per cent of the inhabitants of certain sections of the South have malaria. This estimate, based on the reporting of 204,881 cases during 1914, has led the United States Public Health Service to give increased attention to the malaria problem, according to

the annual report of the Surgeon General. Of 13,526 blood specimens examined by Government officers during the year, 1,797 showed malarial infection. The infection rate among white persons was above eight per cent, and among colored persons twenty per cent. In two counties in the Yazoo Valley, 40 out of every 100 inhabitants presented evidence of the disease.

Striking as the above figures are they are no more remarkable than those relating to the reduction in the incidence of the disease following surveys of the Public Health Service at 34 places in nearly every state of the South. In some instances from an incidence of fifteen per cent, in 1914, a reduction has been accomplished to less than four or five per cent, in 1915.

One of the important scientific discoveries made during the year was in regard to the continuance of the disease from season to season. Over 2,000 Anopheline mosquitoes in malarious districts were dissected, during the early spring months, without finding a single infected insect, and not until May 15, 1915, was the first parasite in the body of a mosquito discovered. The Public Health Service, therefore, concludes that mosquitoes in the latitude of the Southern States ordinarily do not carry the infection through the winter. This discovery indicates that protection from malaria may be secured by treating human carriers with quinin previous to the middle of May, thus preventing any infection from chronic sufferers reaching mosquitoes and being transmitted by them to other persons.

Although quinin remains the best means of treating malaria and is also of marked benefit in preventing infection, the eradication of the disease as a whole rests upon the destruction of the breeding places of Anopheline mosquitoes. The Public Health Service, therefore, is urging a definite campaign of draining standing water, the filling of low places, and the regrading and training of streams where malarial mosquitoes breed. The oiling of breeding places, and the stocking of streams with top-feeding minnows, are further recommended. The Service also gives advice regarding screening, and other preventive measurs as a part of th educational campaigns conducted in sections of infected territory.

This study is typical of the scientific investigations which are being carried out by the Public Health Service, all of which have a direct bearing on eradicating the disease. The malaria

work now includes the collection of morbidity data, malaria surveys, demonstration work, scientific field and laboratory studies, educational campaigns, and special studies of impounded water and drainage projects.—*Bulletin—United States Public Health Service.*

ACTIVITIES AGAINST BLINDNESS.

A movement is now under way to co-ordinate the efforts of the National Committee for the Prevention of Blindness and the National Committee on Prisons and Prison Labor to the extent of securing systematic medical examinations of the eyes of all prisoners in penal institutions, and also provide for them the necessary treatment or glasses. That such service is needed and most desirable has been demonstrated many times over. In Kentucky, where, through the efforts of Miss Linda Neville, Secretary of the Kentucky Society for Prevention of Blindness, an inspection of the eyes of the prisoners was made to ascertain the prevalence of trachoma, it was found that a large number were in dire need of the relief which could be provided only by competent medical treatmnt.

In 1915 the legislature of Alabama, by amendment to the law, made complete provision for the specific reporting of ophthalmia neonatorum and trachoma, with provisions for its enforcement by city, town and county health officials. The reporting is to be immediate on the part of physicians, midwives, nurses and parents, either upon diagnosis or suspicion that the condition exists. Failure to report is punishable by a fine of $25.00 to $50.00 for physicians, and $5.00 to $25.00 for midwives.

Press dispatches telling of an outbreak of trachoma among the school children of Indianapolis were investigated by the National Committee and in reply to inquiries the following information was received from Dr. H. G. Morgan, Secretary of the Department of Public Health and Charities of Indianapolis: "Up to the present date (December 15) we have isolated 50 cases principally in the schools where children attend from the foreign districts. Fortunately, the disease seems to be prevalent

in only a few schools. In our present system of medical school inspection we employ 33 physicians, a chief medical inspector, and 9 school nurses. The work of the nurses is that of following up the cases excluded, and seeing that the school physicians' orders are carried out by the parents, either by consulting the family doctor, taking the children to the dispensary or administering treatment at home."

Baltimore has had a case of blindness resulting from wood alcohol poisoning. Testimony was admitted showing that the drink had been diluted with methyl alcohol. The jobber and the saloon keeper were jointly held responsible for this calamity. A jury has awarded $7,500 damages to the victim, who stated that he purchased the "wiskey" from a dealer and lost his vision a day or two after he had consumed part of the two half pints.

The carelessness and incompetency of a negro midwife who could neither read nor write, who stated that she would not know a case of ophthalmia neonatorum should she see it, and claimed that in her forty years' experience in midwife work she had never encountered a case of this nature, was brought out during the past month in Louisville, when the woman was prosecuted and fined under the act of the Kentucky laws which required a midwife to report within six hours to the city or county health officer any case of sore eyes in a new-born child. The case was discovered by nurses of the Babies' Milk Fund Association and the Associated Charities. The city Health Office was notified and the child sent immediately to the City Hospital, and the prosecution followed immediately. A few days later two other negro midwives in Lexington were prosecuted and fined for failure to report to the Board of Health cases of children born with diseased eyes. A physician in Louisville is now being prosecuted by the Board of Health for failure to report a case of babies' sore eyes in accordance with statutory requirements.

As a further emphasis upon the importance of using a prophylactic in the eyes of all infants and reporting all cases of sore eyes, the division of Vital Statistics of the New York State Department of Health has just issued a unique and very valuable

little booklet entitled, "Physician's Pocket Memorandum of Births Registered." The pages of the book are blank forms upon which to record the information to be placed upon the birth certificate, and among other questions we find: "What preventive for ophthalmia neonatorum?" And more than this, a paragraph headed "Free! Prevent Blindness" reminds physicians that the State Department furnishes 1% silver nitrate solution outfits gratuitously; reminds them that babies' sore eyes is reportable. And finally, on the back of the cover, appeals to the physician's humanity by reminding him that "Neglect to use a few drops of 1% nitrate of silver may condemn a child to total blindness for life."

For the purpose of mitigating and destroying the causes which have led to such a vast number of cases of unnecessary blindness, the New York Committee for the Prevention of Blindness has invited representative ophthalmologists and obstetricians throughout New York State to join the Committee as Associate Members, and to assist in extending prevention of blindness work and make it as efficient as it can and should be.

There is probably no state where trachoma has such a hold upon the Indians as in Oklahoma. A recent Government survey showed 88% of the pupils enrolled in one Indian school in that state afflicted with this disease, while 68.72% of all Indians resident on the reservations in the state of Oklahoma have trachoma. To cope with this the new Page Hospital will be an invaluable addition to the health agencies of the state. While the hospital is to be self-sustaining, if possible, Mr. Page has written to the National Committee, "the penniless patients will receive the same treatment as the millionaire."

With a thoroughness which commands admiration the great South American Republic, Argentina, is attacking the problem of preventing blindness. With every civil marriage certificate is included a printed advice, declaring that one-third of the blind have become so from babies' sore eyes and that the parents must take pains to see that the newly-born receive proper care. Directions are given for treatment at birth. At the time

of registration of the birth a certificate is given which bears also the same advice.

A census of the blind in Argentina gives the number as 6,856, which President Mendoza believes to be a proportion of about 80 in every 10,000.—*Extracts from News Letter No. 5. National Committee for the Prevention of Blindness.*

Medical News Items

Columbia University Dental Course.—The Faculty of the College of Physicians and Surgeons, Columbia University, realizing the importance of teeth and mouth infection to systematic disease, have voted in favor of the establishment of a dental department in connection with the medical school. The school of dentistry will be closely associated with the medical school and the entrance requirements will be the same as to the medical school. This new school will be the first university dental school in New York City and the second in the State. It will be the first four-year course of dentistry ever given in the Empire State.

Besides this departure for Columbia University, a course of six lectures on Military Administration, Medicine and Surgery, will be given at the College of Physicians and Surgeons, beginning March 28, every Tuesday, until May 2. The lectures will be open to the general medical public as well as to the students of the college.

National Committee for Mental Hygiene Elects Officers—At the eighth annual meeting of this committee, held February 2 in New York, the following officers were elected for the ensuing year: President, Dr. Lewellys F. Barker, Baltimore; vice-presidents, Drs. Charles W. Eliot and Wm. H. Welch, Baltimore; treasurer, Otto T. Bannard; medical director, Dr. Thos. W. Salmon, New York; secretary, Clifford W. Beers; executive committee, Drs. August Hoch, chairman, New York, Geo. Blumer, New Haven, Conn., Prof. Stephen P. Duggan, Drs. Wm. Mabon, New York, Wm. L. Russell, White Plains, N. Y., and Lewellys F. Barker, Baltimore; finance committee, Prof. Russell H. Chittenden, chairman, Otto T. Bannard, Dr. Henry B. Favill, Chicago, and Wm. J. Hoggson; committee on mental deficiency, Dr. Walter B. Fernald, chairman, Waverly, Mass.;

Dr. L. Pierce Clark, New York, Prof. E. R. Johnstone, Dr. Chas. L. Little, Thiells, N. Y., and Dr. Albert C. Roers, Los Angeles.

The Southern Sociological Congress will meet in New Orleans, April 12-16, 1916, in its fifth annual session. The purpose of the congress is to study and improve the social, civic and economic conditions of the South. Delegates from twenty-four states, and from Mexico, Cuba, Guatemala, Honduras, Costa Rica, Hayti, Nicaragua, Porto Rico, Salvador, Panama, and Canada. For information, address J. E. McCulloch, Nashville, Tenn. The headquarters of the Congress will be at the St. Charles Hotel.

The St. John-St. Charles Bi-Parish Medical Society held its regular quarterly meeting at Reserve, La., March 1. After the reading of papers, reports of cases and transaction of routine business, the meeting adjourned.

Nurses Graduate at Touro.—The Touro Infirmary Training School for Nurses graduated eighteen young women on March 9, 1916. Mr. E. V. Benjamin, president of the infirmary, delivered the opening address and presented the diplomas and medals. Rabbi Max Heller and Dr. W. W. Kohlmann, chairman of the medical staff of the infirmary, also made addresses.

Pharmacy Board Examination.—The Louisiana State Board of Pharmacy held an examination at Tulane University, February 18 and 19. Out of the 34 presenting themselves for examination, 13 passed as registered pharmacists and 3 as qualified assistants. The following are the successful candidates:

Registered pharmacists: Alfred J. Claiborne, Albert J. Comeaux, Kelil Diab, Carnot L. Dupuy, Eugenie Flot, Anthony P. Kennair, Pascal J. Lluzza, John B. Murphy, Jacob Richmond, E. B. Robinson, Jr., J. Claiborne Terrell, Robbie F. Williams. Qualified assistants: Nicholas Frank, Victor H. Purel, Paul L. Wright.

The next examination will be held in New Orleans, May 19 and 20, 1916.

Alienists and Neurologists.—The Chicago Medical Society announces the fifth annual meeting of the Alienists and Neurologists of the United States, to be held under the auspices of the Chicago Medical Society, June 19-23, 1916, at La Salle Hotel. For further information, address W. T. Mefford, Sec-

retary of Conference, 2159 Madison St., Chicago.

Mutter Lecture.—On February 18, 1916, at the College of Physicians of Philadelphia, Dr. Rudolph Matas, professor of surgery, Tulane University of Louisiana, delivered the "Mutter Lecture." The subject of the lecture was "The Surgical Treatment of Aneurism" and was plentifully illustrated with original drawings and lantern slides.

The Mutter lectureship was founded by Dr. Thomas Dent Mutter, at one time professor of surgery at Jefferson College, who left a legacy which provided for this lectureship and the now historic museum which bears his name. The lectures have been given annually since 1865 and the lecturers have been selected from the foremost surgeons and surgical teachers in America.

Relief Fund for the Belgian Profession.—The report of the treasurer, Dr. F. F. Simpson, of the committee of American physicians for the aid of the Belgian profession, shows, for the month ending March 4, 1916, a total disbursement of $7,310.04, and a balance on hand of $631.82. Total receipts, previously reported, are $7,941.86. No contributions since February 5, 1916.

American Medical Golfing Association.—This association has completed its oranization with the following directors: president, Dr. Wendell C. Phillips, New York; vice-president, Dr. James Eaves; secretary, Dr. Will Walter, Chicago. All fellows of the A. M. A., who enroll before April, 1916, become charter members. The second tournament of the association will be held in Detroit in June. Information may be obtained from the secretary.

Famine in Quinin Feared.—Should the European war continue much longer, the people of the United States, it is feared, will be cut off from their usual supply of quinin. At the beginning of the war the price of sulphate of quinin was 20 cents an ounce; to-day it is sellin at $1.50 an ounce. It is readily seen what such a difference may mean to this country.

Excessive Smoking.—In an article entitled "Tobacco Habit," by Dr. Robert Abbe, senior surgeon of St. Luke hospital, and published in the *New York Medical Record*, the doctor has this to say: "Excessive smoking during work is not a delusion when men claim that it clears their brain and keeps them active. It

is like the Scotchman's snuff. If one analyzes the result, however, one can see that the false energy is as abnormal as the whip lash to a horse, and in the end hurtful. On the other hand, one sees numerous high officials in corporations of national importance, who think their weighty responsibilities are best met by cool, clear brains and natural balance of judgment, unwarped by stimulants, either alcoholic or tobacco." The doctor goes on to say that at West Point smoking was prohibited in 1891, and fifteen years later the summary of medical records shows the advantage in work and discipline.

Safety First Exposition.—During the latter part of February, in the New National Museum at Washington, there was held a Safety First Exposition, to demonstrate to the public the government work in promoting the saving of life and property. Twenty-six governmental bureaus participated and their apparatus and methods used were exhibited and demonstrated by experts. First aid in war and life-saving at sea was illustrated by the Bureau of Medicine and Surgery of the Navy Department.

Obstetrical Journal Issues Delayed.—On account of the scarcity of contributors, due to a great number of men who have placed their services at the disposal of the army, the publishers of the *Journal of Obstetrics,* London, have announced that there has been no issue of the *Journal* since May. It is expected, however, to have four issues ready about the end of March, and after the 1915 issues are published, the *Journal* will appear quarterly until the war is over.

Harrington Lectures.—Dr. Milton J. Rosenau, professor of preventive medicine and hygiene in Harvard University, will deliver the Harrington Lectures this year at the University of Buffalo Medical School on May 30, 31 and June 1. Two of the lectures will be on Anaphylaxis, and the third on Education for Public Health Service as a Career.

No After-Dinner Speeches Increase Attendance.—According to report from Topeka, Kansas, the cutting out of the after-dinner speeches at the annual dinners of the Shawnee County Medical Society has increased the attendance 100 per cent.

Anthrax In Hides.—The surgeon-general of the United States Public Health Service has been requested by C. T. C.

Rogers of the New York State Labor Department, to issue an order for the redisinfection of all hides imported from anthrax-infected ports of China and South America. Niles Reynolds of Gloversville, N. Y., died from anthrax on February 13, having contracted the disease while working on sheep skins imported from South America.

Investigation on Deficiencies of the Child Supply.—Because of the frequent rejection of men who have presented themselves for enlistment in the military service, due to physical defects which originated in childhood, Senator Kenyon, of Iowa, has introduced a resolution providing for the creation of a committee to investigate the causes of child poverty and to propose remedies for it. The commission will be composed of seven members, three of whom are to be physicians.

Medical Licensure.—If a bill which has recently been introduced in Congress passes, a physician may practice medicine in any territory, district, dependency or possession of the United States, if he can comply with certain conditions prescribed by the bill. The privileges granted by the bill are available to:

"Any physician or surgeon who assisted, without compensation, in caring for the sick and wounded soldiers of the Army of the United States at the siege of Santiago, Cuba, in 1898, in the war with Spain, and who, after the surrender of Santiago, was in charge of a yellow fever hospital and while so in charge of said hospital in 1898 had an attack of yellow fever, and who was afterwards commissioned major and brigade surgeon, and in 1899 commanded a yellow fever hospital at another station in Cuba, and who, while on military duty in Cuba, had a second attack of yellow fever, or while in line of duty, was physically disabled, and who was honorably discharged from the service of the United States.

American College of Surgeons' Endowment Fund.—In voluntary subscriptions from its members, the College has secured $500,000. The income of this amount will be used to advance the purposes of the college, especially in gathering and disseminating useful information.

Reformatory Boys and War.—According to the *London Statesman,* about 20,000 boys from reformatories and industrial schools of Great Britain have served in the war. Of this number, three have won the Victoria Cross, twenty-five have earned the Distinguished Conduct Medal, twenty-five have been mentioned in dispatches, and three have obtained commissions.

Bill for New Orleans Quarantine Station.—Representa-

tive Albert Estopinal of Louisiana has introduced a bill into Congress proposing a quarantine station at or near New Orleans, at a cost not exceeding $300,000. The bill authorizes the secretary of the treasury to receive on behalf of the United States such real estate as may be donated for the purpose of enabling them to carry into effect the provisions of the act.

Smallpox not Chickenpox.—Because of the faulty diagnosis of smallpox, which resulted in the spread of the disease among the inmates of the Children's Home Society of Missouri in St. Louis, ten patients were removed to the infectious disease hospital. The disease had been diagnosed chickenpox.

Medical Prize.—The Argentine Academy of Medicine, commemorating the centennial of the independence of the country, has offered a prize of 2,500 pesos for the best unpublished work on a medical subject presented at the Congress of Social Sciences, to be held at Tocyman, Argentina, July 9, 1916.

Wanted for the Panama Canal Hospitals.—Single men, between the ages of 22 and 30 years, American citizens, graduates of medical schools Class of 1916, for duty on the Isthmus of Panama as interns. Services required as soon as possible after graduation. No civil service examination required and appointments will be for a period of one year from date of entry. No compensation for services other than free steamship transportation to and from the Isthmus, free subsistence, lodging and laundry while on the Isthmus, and interns will be given the status of "employees of the Panama Canal," wtih the leave privileges theerof, and free transportation to and from the United States when taking their authorized leave. The work required of interns is the same as that required in the large hospitals of the United States. For application blanks and other information write to the Chief of Office, The Panama Canal, Washington, D. C.

Journals Combine.—The *American Journal of Gastro-Enterology* has combined with *The Enterologist* and hereafter will be published (beginning with the March number, first of year) as *The Proctologist and Gastroenterologist*, from St. Louis. Dr. Lewis Brinton, Philadelphia, and Dr. Anthony Bassler, New York, will have editorial charge of Gastroenterology; Dr. A. L. Benedict, Buffalo, editor of *Dietetics*, and Dr. Rollin H. Barnes, St. Louis, will be managing editor and publisher respectively.

Personals.—Dr. C. C. Bass, professor of experimental medicine, Tulane University, was elected head of a group of scientific workers to study malaria in Mississippi, under the direction of the International Health Commission.

Capt. Harry G. Humphreys, Medical Corps, United States Army, has charge of the correspondence course for the medical officers of Louisiana.

Removals.—Dr. F. R. Butts, from Annona, to Weaver, Texas. Dr. R. H. Blackman has opened his office at 406-410 Commercial National Bank Bld., Shreveport, La.

Died.—On March 8, 1916, Dr. Wm. L. Rodman, of Philadelphia. Dr. Rodman had been president of the American Medical Association since June 25, 1915. Dr. Rodman was one of the best known surgeons in the country.

On February 18, 1916, Dr. Angelo Maestri, a prominent physician of New Orleans, aged 45 years.

On February 15, 1916, Dr. R. H. Hanchey, of Sugartown, La., aged 40 years.

Book Reviews and Notices

Physiological Chemistry, A Text-book and Manual for Students. By Albert P. Mathews, Ph. D. William Wood and Company, 1915.

The close relationship between physiological chemistry and the clinical side of physiology make this work of special value not only to the student of physiological chemistry and physiology, but to the general practitioner as well.

The care with which the author incorporates the important phases of physical chemistry in connection with cell metabolism is very noteworthy.

Mathews realizes the importance of a knowledge of experimental physiology in connection with the study of physiological chemistry; and he has described in detail many of the experiments which heretofore have been limited to works on physiology.

The special physiological features of the ductless glands are very thoroughly considered and the conclusions are carefully drawn.

The chapter on absorption is too brief and incomplete. Like in the majority of text-books on physiology, the discussion of lymph is incomplete.

The chemistry of milk is passed over too lightly. A concise review of this subject would place an added value upon the book.

The last part of the book (about one hundred and sixty pages) is devoted to practical work and physiological methods and is of great value.

At the end of each subject, Mathews has tabulated for the convenience of the reader the recent literature of the subject and a discussion.

This work is sure to become a standard in this country and no doubt the second edition will be even more complete.

F. P. CHILLINGWORTH.

Syphilis as a Modern Problem. By Wm. Allen Pusey, M. D., A. M. A., Chicago, 1915.

This work is part of the "Commemoration Volume" issued by the American Medical Association, as a tribute to the medical sciences making the building of the Panama Canal possible, on the occasion of the 1915 San Francisco meeting.

The purpose of the author is to present the problems of syphilis as they affect the individual and society, but not the truly therapeutic side of the subject.

First, a resume of the history of syphilis is given; then a description of its course; next its pathology and prognosis; after which the problem of syphilis and marriage is discussed; its prevalence, distribution, method of infection; finally, a chapter on prophylaxis.

The most important conclusion reached is that the control of syphilis is a sanitary problem and that medicine can offer practical and effective measures for such.

A good book for the intelligent layman to read and an interesting resume for the practitioner. C. C.

Theory and Practice of Bloodletting, by Heinrich Stern, M. D., LL. D., Rebman & Co., New York.

Stern has given us not only an interesting and entertaining book but a valuable and practical one as well. No one who has seen the spectacular relief afforded by bloodletting in appropriate cases can hesitate to endorse Stern's statement that the procedure is in a fair way to "regain its full citizenship in the realm of therapeutics" and his contention that it is worthy of such re-instatement. The chapter upon the history of blood-letting, covering as it does practically the whole history of medicine, is worthy of commendation to every student and practitioner. In the sections upon the indications for bloodletting and the results obtained therefrom Stern gains strength and respect by the moderation of his statements and the conservatism of his suggestions. I. I. LEMANN.

"The Practical Medicine Series" (Series 1915), under the general editorial charge of Charles L. Mix, A. M., M. D., Vol. VI. General Medicine. Edited by Frank Billings, M. S., M. D., and J. H. Salisbury, A. M., M. D. The Year Book Publishers, Chicago.

This small year book may be commended for its convenient size

and shape. It covers its field fairly adequately in spite of its small compass so that a hasty skimming through its pages will repay the busy practitioner and serve to give him a bird's-eye view of the topics under discussion and investigation in the field of general medicine during the year. The editing is sufficiently personal to give a flavor of the editor's own convictions as for instance in the emphatic negative opinion expressed by Billings as to the rationale of vaccins in the treatment of acute infectious diseases (p. 39). It need hardly be said that such editing adds greatly to the value of the book. There is one very important subject not touched upon, namely, metabolism and the diseases of metabolism—a very serious omission unless they are covered in a separate volume.

LEMANN.

"The Medical Clinics of Chicago." November, 1915, Vol. I, No. 3. Published monthly by W. B. Saunders & Co.

The popularity of Murphy's clinics has suggested the publication of a parallel series in general medicine. Undoubtedly the case method is of value in reading medicine as it is teaching medicine. The shining exemplar of the method of course is Cabot in his two volumes on Differential Diagnosis. The form of the present series, namely, that of bright, chatty and rather informal talks adds to the readability, and the tired and hard run practitioner and teacher will glean suggestion and inspiration from these lectures where poring over more ponderous and exhaustive volumes would be burdensome. The criticism made by a reviewer in another journal that some of the lectures show lack of preparation as well as some "padding" with more or less unnecessary dialog between the lecturer and his auditors, seems to be well taken. Properly developed and edited this medical series should earn a popularity equal to that of the surgical series issuing from the Mayo and Murphy clinics.

LEMANN.

Simplified Infant Feeding, by H. Dennett, B. S., M. D. J. B. Lippincott Co. Philadelphia and London.

This book contains a multitude of practical suggestions in the feeding of infants. There is much of originality in the presentation of material and no pains have been spared in presenting detail. The relation of food and feeding methods to the state of the baby is well discussed and particular indications in all sorts of conditions are debated and met. The diet treatment of diarrhea and constipation receives full consideration. The values of milk contents and of modifications are shown and the application of this information is made. All sorts of tables illustrate the running text. The book is of practical value.

DYER.

Hospitals and the Law, by Edwin Valentine Mitchell, LL. B. Rebman Company, New York.

The author has reviewed the legal phases of hospital regulation and operation and presents his findings in a readable book. It is

arranged for ready reference and is full of legal decisions in matters which frequently come up for consideration in and out of court. Not only the rights of the hospital are shown but the obligations, too, are set forth. Intending hospitals, as well as those existent, may find much of profit if their administrators would read and learn some of the matter contained in the book.

DYER.

Nitro by Hypo, by Edwin P. Haworth, M. D. The Williams Magazine Company, Kansas City.

This collection of essays deserves a more dignified title, for it is full of good humored discussion of the doctor's foibles and difficulties with an undercurrent of wholesome philosophy altogether worth while. To the young doctor particularly, the human side of the book will be of service as a survey of what may be before him and in many ways there is much of advice in both practice and in ethics.

DYER.

Progressive Medicine. Vol. XVIII, No. 4. Edited by Hobart Amory Hare, M. D., assisted by Leighton F. Appleman, M. D. Lea & Febiger, Philadelphia and New York.

This volume is made up of the customary excellent material distributed over the digestive tract and its appertaining organs (E. H. Goodman); the kidneys (J. Harold Austin); the genito-urinary system (Charles W. Bonney); surgery of the extremities and other surgical miscellany (Joseph C. Bloodgood); and practical therapeutics (H. R. M. Landis). Any of the divisions would establish the value of this digest, but in each there is a review of modern thought on the subject. The therapeutic referendum of Landis in the last pages of this volume summarizes the latest remedies suggested in medical literature and includes the discussion of serums as well as drugs. The comprehensive review of emetin is especially noteworthy, and that on pituitrin brings the subject up to date.

DYER.

Publications Received

W. B. SAUNDERS COMPANY. Philadelphia and London, 1916.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume V, No. 1. February, 1916.

Physical Diagnosis, by John C. DaCosta, Jr., M. D. Third edition, thoroughly revised.

Sexual Impotence, by Victor G. Vecki, M. D. Fifth edition, enlarged.

Cancer of the Stomach, by Frank Smithies, M. D., with a chap-

ter on the **Surgical Treatment of Gastric Cancer**, by Albert J. Ochsner, M. D., LL. D., F. R. C. S.

Pellagra, by George M. Niles, M. D. Second edition.

Pathogenic Bacteria and Protozoa, by Joseph McFarland, M. D., Sc. D. Eighth edition, revised.

THE MACMILLAN COMPANY. New York, 1916.

Roadside Glimpses of the Great War, by Arthur Sweetser.

WILLIAM WOOD & COMPANY. New York, 1916.

A Reference Handbook of the Medical Sciences, by various writers. Volume VI. Third edition, completely revised and rewritten, edited by Thomas Lathrop Stedman, A. M., M. D. Complete in eight volumes.

LEA & FEBIGER. Philadelphia and New York, 1916.

Autoplastic Bone Surgery, by Charles Davison, M. D., and Franklin D. Smith, M. D.

Venereal Diseases, by James Hayden, M. D., F. A. C. S. Fourth edition, thoroughly revised.

F. A. DAVIS COMPANY. Philadelphia and London, 1916.

A Practical Treatise on Infant Feeding and Allied Topics, by Harry Lowenburg, A. M., M. D.

W. M. LEONARD. Boston, 1916.

The Starvation Treatment of Diabetes, by Lewis Webb Hill, M. D., and Rena S. Eckman, with an introduction by Richard C. Cabot, M. D. Second edition.

C. V. MOSBY COMPANY. St. Louis, 1916.

Diagnostic Methods, by Herbert Thomas Brooks, A. B., M. D. Third edition, revised and rewritten.

A Handbook of Infant Feeding, by Lawrence T. Royster, M. D.

Candy Medication, by Bernard Fantus, M. D.

WASHINGTON GOVERNMENT PRINTING OFFICE. Washington, D. C., 1916.

Public Health Reports. Volume 31, Nos. 6, 7 and 8.

Hearing on the Bill to Increase the Efficiency of the Military Establishment of the United States.

MISCELLANEOUS:

Report of the Committee on Fractures of the American Surgical Association for 1915.

The Colorado Industrial Plan, by John D. Rockefeller, Jr.

Proceedings of the Medical Association of the Isthmian Canal Zone. April 1914, to October, 1914. (Panama Canal Press, Mount Hope, C. Z., 1916).

Reprints

The Operative Treatment of Chronic Intestinal Stasis; The Cancer Patient's Dilemma; The Conservation of the Human Breast; A Contribution to the Prevention of Cancer, by Wm. Seaman Bainbridge, A. M., Sc. D., M. D., C. M.

Preservation of Anatomic Dissections with Permanent Color of Muscles, Vessels and Organs by Newer Methods, by Edmond Souchon, M. D.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans for February, 1916.

Cause.	White	Colored	Total
Typhoid Fever	1	.....	1
Intermittent Fever (Malarial Cachexia)	.....	1	1
Smallpox	.....	.....	....
Measles	.....	.....	....
Scarlet Fever	.....	.....	....
Whooping Cough	.....	.....	....
Diphtheria and Croup	8	1	9
Influenza	10	12	22
Cholera Nostras	.....	.....	....
Pyemia and Septicemia	.....	.....	....
Tuberculosis	35	60	95
Syphilis	2	3	5
Cancer	21	5	26
Rheumatism and Gout	.....	1	1
Diabetes	3	.....	3
Alcoholism	.....	.....	....
Encephalitis and Meningitis	3	.....	3
Locomotor Ataxia	2	.....	2
Congestion, Hemorrhage and Softening of Brain	23	13	36
Paralysis	1	1	2
Convulsions of Infancy	.....	1	1
Other Diseases of Infancy	16	9	25
Tetanus	1	1	2
Other Nervous Diseases	2	2	4
Heart Diseases	67	48	115
Bronchitis	2	2	4
Pneumonia and Broncho-Pneumonia	11	20	31
Other Respiratory Diseases	2	.....	2
Ulcer of Stomach	.....	.....	....
Other Diseases of the Stomach	1	1	2
Diarrhea, Dysentery and Enteritis	14	5	19
Hernia, Intestinal Obstruction	4	1	5
Cirrhosis of Liver	3	4	7
Other Diseases of the Liver	4	3	7
Simple Peritonitis	.....	.....	....
Appendicitis	.....	1	1
Bright's Disease	20	20	40
Other Genito-Urinary Diseases	8	9	17
Puerperal Diseases	6	4	10
Senile Debility	.....	3	3
Suicide	2	.....	2
Injuries	21	18	39
All Other Causes	13	11	24
Total	306	260	566

Still-born Children—White, 21; colored, 13. Total, 34.

Population of City (estimated)—White, 276,000; colored, 102,000. Total, 378,000.

Death Rate per 1000 per Annum for Month—White, 13.31; colored, 30.59. Total, 17.97.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure.....30.17

Mean temperature .....57.

Total precipitation ..... 2.76 inches

Prevailing direction of wind, northeast.

New Orleans Medical and Surgical Journal.

VOL. LXVIII. MAY, 1916. No. 11

Original Articles

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. A complimentary edition of one hundred reprints of his article will be furnished each contributor should he so desire. Covers for same, or any number of reprints, may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

THE EARLY HISTORY OF MALARIA.

From the Pharmacological Department of the Evans Memorial, Boston.

By CONRAD WESSELHOEFT, M. D., Boston.

It may seem out of place to enter upon the historical side of this subject but as we expect to investigate our topic from many different points of view it is only fitting that we should begin with an historical foundation. Moreover, by studying the original sources and the development of our present knowledge, and by comparing what our predecessors knew and believed with what we to-day consider to be facts, we gain a better appreciation of the basis upon which our modern therapeutics rests.

When and where malaria first made its appearance is a matter of conjecture. The chances are that man has suffered with this disease from prehistoric times. Some construe the myth of Hercules and the Hydra to indicate the reclamation of marshes which were uninhabitable on account of malaria. The story of Apollo and the Python has also been interpreted to indicate a conquest of this dreaded disease. Others see references to malaria in the Iliad in the Orphic poems, and in the fifth book of

Moses or Deuteronomy.[1] These speculations are very far-fetched. I find nothing in Deuteronomy which suggests intermittent fever, and so far as the Iliad is concerned, the word **puretos,** meaning "fever" or "heat," occurs but once, and there is nothing in the line to suggest malaria except the time of year * Aristophanes, however, uses the same word in a passage which might be construed to refer to the disease in question.

Groff maintains that the ancient Egyptians suffered from malaria, as indicated by the annual recurrence of a fever which is mentioned in the inscriptions on the ruins of the temple at Denderah.

This brings us to Hippocrates, who is invariably given the credit of having been the first to describe malaria and to distinguish the different forms. In his "Epidemics," this ancient medical writer and teacher differentiates a continuous from an intermittent fever and subdivides the intermittents. He says: "Fevers are,—the continual, some of which hold during the day and have a remission at night, and others hold during the night and have a remission during the day; semitertians, tertians, quartans, quintans, septans, nonans."[2] Among the fourteen cases of fever which he describes, none is in any way a typical case of malaria. In his Aphorisms, however, he shows his familiarity with intermittents. Here he speaks of periodical paroxysms coming at the same hour, although a paroxysm is not defined by him as a chill and fever, but merely as a fever.

In the tract on The Nature of Man, written either by Hippocrates or by Polybus, his son-in-law and pupil, there is another pertinent passage concerning fevers: "Omitting those arising with evident pain, there are four types, the names of which are: continued fever, quotidian fever, tertian fever, and quartan fever." This fact is frequently quoted by writers on malaria as the work of Hippocrates, because Galen ascribes it to him. Aristotle, however, seems to have thought that it was written by Polybus.

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*"*Kai te phérei pollon puretón seiloisi brotoisin."* xxii, 31.

The line refers to the dog star, which "brings much *purétos* to miserable mortals." This word is translated by "heat" or "fever," but "fever" is probably correct. In later Greek the word was certainly used in this sense, and *épialos* which perhaps originally meant nightmare, came to mean the shivers preceding a fever, i. e., ague. There is a fragment of Aristophanes (315) quoted by the Scholiast on Vespæ 1038, which suggests a malarial fever, *ama d'épialos puretoú erodromos,* which translated means "and at the same time the shiver which is the forerunner of fever." Vespæ 1038 has the same word *épialos,* perhaps in the same sense.

From all this it would appear that malaria existed in the time of Hippocrates (about 450—350 B. C.), since tertian and quartan fevers are in all probability of a malarial nature. But we are not justified in asserting (as is too often assumed) that Hippocrates differentiates malaria from other forms of intermittent fevers What Hippocrates did was to distinguish intermittent from continuous fevers, and to subdivide these intermittents according to the number of days between the paroxysms, giving us a nomenclature which still remains in use. Therefore, for all practical purposes, we may say that the history of malaria begins with the Hippocratic writings, which in themselves imply a long tradition.

Jones[4] informs us that he finds clear references to malaria in the writings of Sophocles, Aristophanes, Plato, Aristotle, Demosthenes, and the inscriptions, but he maintains that the disease did not become endemic in Attica until the close of the fifth century B. C. It is interesting to note that Hesiod, the Bœotian poet, did not mention fever as one of the farmer's plagues, although, as Jones suggests, he would probably have done so had malaria existed. Bœotia is to-day a notoriously malarial region. According to Puschmann,[5] Erasistratos, who was born about 330 B. C., mentions fevers associated with inflammation of the liver and the "useless spleen." Plutarch,[4] a native of Bœotia, who lived between 45 and 125 A. D., remarked that the poor country-folk constantly fell ill during their exertions at harvest time, and that fever was one of their great dangers; he even used the term **phrevitis**, which later denoted a pernicious type of intermittent fever.

Celli[6] gives us the most complete history of malaria in Italy. According to this author, the disease raged among the earliest inhabitants of Latium These people took the first steps in sanitary engineering along the lines of preventive medicine. Recognizing that the stagnant waters of the Campagna were a cause of ill health, they made a network of drains, which have been discovered by recent archæologists. This remarkable drainage system permitted numerous settlements in this territory to grow up and flourish. Nevertheless, the goddess "Febris" continued to be honored in the land, and this implies that fevers were prevalent. Cicero refers to the tradition that Romulus founded his city on a healthy spot in a pestilent neighborhood. The Cloaca

Maxima, which was built in the early days of Rome, must have done much to diminish the breeding places of mosquitoes. Livy remarks that the Roman soldiers, after the siege of Capua, declared that they never wanted to go back to the pestilent and barren country about that city (*"in pestilenti atque arido circa urbem loco"*). Among the many Latin writers who mention unhealthy localities, bad airs, autumnal fevers, and swollen spleens none gives us a clearer indication of the existence of typical malaria than Horace. He was very much afraid of it himself, especially in traveling, and alludes to the deadly semi-tertian, that is, probably, to what is now called pernicious or æstivo-autumnal. He speaks of the foolishness of attempting to hold out against a fit of trembling at dinner, as to do so would only lead to a disaster. We can not mistake this reference to the sudden onset of a malarial chill coming, so to speak, out of a clear sky. Celsus enters at length into the discussion of fever, and recognizes the semi-tertian. Celli cites no less than seventeen writers from Cato to Palladius who make references which indicate the existence of the disease throughout the rise and decline of the Roman Empire. Varro, Columella, Palladius, and Vitruvius suggested that the minute animals seen in the stagnant water of swamps, together with the emanations from the marshes, were the causes of intermittent fevers.[7]

Jones[4] has taken up the influence of malaria upon Greek and Roman history, especially in regard to the prolonged effects of the disease on national prosperity and national character He maintains that malaria was comparatively rare during the rise of Athens and Rome, and that it increased during the decline in both cases. Moreover, he goes on to say:—

"The change in the Greek character was just that which we should expect malaria to produce in a highly sensitive and cultivated people, while the savage brutality of the later Romans may be due to the same cause. The peculiar effects of a disease on national morality will certainly vary with the prominent national characteristics. The more effeminate Greek grew weak and inefficient; the stern Roman became viciously cruel. But it must always be carefully remembered that other factors, physical and psychological, contributed to the change in both cases. But malaria gave rise to physical conditions which afforded an excellent opportunity for other influences to produce their full effect."

This degrading influence of malaria on moral character is men-

tioned by North in his "Roman Fever." Just how much bearing it had on the fall of these two cities is difficult to determine. Whether the disease increased because of the conditions associated with the decline or vice versa must be considered. Certainly the Greeks were sufficiently effeminate, and the Romans sufficiently cruel, before their decline began. The luxury and leisure simply gave opportunity for a greater display of these national characteristics. Luxury and idleness tend to bring out the bad traits of any people, but a given toxic substance usually acts in a general direction, the exceptions usually exhibiting the opposite or no effects. That malaria does effect the mentality of the patient is not to be questioned, but the prolonged effect is to make the patient indifferent and melancholy rather than to accentuate the predominant character of the individual. However, this might lead to moral degradation, just as the hook-worm disease has brought this about among its victims in the South.

The early Hindu medical writers, Charaka and Susruta, were dominated by the Brahman religion. They recognized three types of intermittents. The quotidian was a disease of the meat, the tertian of the fat, and the quartan of the bones.[8] In an extract from the Sanscrit Susruta, written at least thirteen centuries ago, and translated by Sir Henry Blake, there is a brief enumeration of some of the prominent symptoms of malaria. These symptoms are ascribed to the bites of no less than "twelve different kinds of terrific mosquitoes, with equally terrifying Hindu names . . . Their bite is as painful as that of serpents and causes diseases resulting from the three humors joined together (wind, bile, phlegm);" "the bite, as if burnt with caustic or fire, is red, yellow, white, and pink in color, accompanied by fever, pain of the limbs, hair standing on end, pain, vomiting, diarrhea, thirst, heat, giddiness, yawning, shivering, hiccup, burning sensation, intense cold, etc."[9] The editor who quotes this extract in the *Journal of the A. M. A.* makes the appropriate remark that this "approaches some of the early Greek records of disease in fidelity to fact."

The Arab physician Rhazes (932 A. D.) mentioned intermittent fever, but, as with Galen, his writings on the subject show that he was influenced by the Hippocratic works, nor did he offer anything new. He was also familiar with the works of Charaka and Susruta.

The Chinese of about this period also mention intermittent fever. According to their school, there was a specific drug for each disease, and among the many mineral and vegetable drugs employed by them, arsenic was chosen as the specific for these cases.[8]

Throughout the Middle Ages we find little mention of intermittent fevers except what was borrowed from the ancients, although Celli cites evidence to show that the disease continued to ravage in the Campagna with varying intensity. Paracelsus, who lived in Germany between 1490 and 1541, appears to have had experience with malaria in his practice, and advocates the most grotesque and unique treatment with magic. Mercatus (Luiz de Mercado), who flourished during the last half of the 16th century as Court physician to Philip II and Philip III of Spain, wrote on the subject of intermittent fevers in terms of the humoral vagaries of his time.[7]

In 1624 Adrian Spigelius* of Brussels published an extensive treatise on "Semitertiania."[11] It is the first long work on intermittent fever, comprising four books in all. In the first, he deals with the history from Hippocrates, Celsus, and Galen down to his own time, and then enters into a discussion of the causes. The second book takes up the diagnostics, with records of several of his own cases, while the third and fourth are devoted to the treatment. In the elaborate work of this Belgian physician and scholar, who held the position of Professor of Anatomy at Padua, we see a complete reflection of the highest type of medicine in his day. Dominated by the writings of the ancients, and permeated with the extravagant notions regarding the humoral causes of disease, we find him relying on the words of the Greeks and Romans, and to all practical purposes offering nothing new either in the nature or treatment of intermittents. He discusses his own cases without exhibiting any originality, although he

*Adrian Vanden Spieghel (or Adriaan van den S.) was born in Brussels in 1578. He studied at Padua, and practiced in Belgium, later moving to Germany (Moravia). In 1605 he was appointed Professor of Anatomy and Surgery at his alma mater, being the direct successor to Vesalius. This position he held to his death, which occurred at the age of 47 in 1625. He was the first author of an extensive treatise devoted to intermittents. This was published in Frankfurt in 1624, and later included in his "Opera," edited by Van der Linden and published at Amsterdam in 1645. Spigelius was a botanist and internist as well as anatomist, although he apologizes in his introduction to this work for venturing on the domain of others. It is rather surprising that his name is omitted with such regularity by modern authors in connection with the history of malaria. (Bibliography, see Gurlt and Hirsch, Biographisches Lexicon der Hervorragenden Aerzte. Wien u. Leipzig. 1887; also Laird, A. T., **Albany Medical Annals.** Vol. XXVII. No. 10, p. 726.)

does give a clearer picture of a typical malarial paroxysm than any of the earlier medical writers. From him we learn that the disease occurred in Germany as well as in Italy.

Shortly after the death of Spigelius (1625) came the introduction of the cinchona bark into Europe (1632), and with it we have a reawakening of interest in intermittent fever. Here begins a new period in the history of malaria, but before entering into this new development, let us look back at the treatment which was in use up to this time.

Hippocrates in his Aphorisms tells us, "We should purge upward in summer and downward in winter"[3] (IV, 4)—from which we may assume that his intermittents were given hellebore,—"and that we must retrench during paroxysms, for to exhibit food would be injurious. And in all diseases having periodical paroxysms, we must restrict during paroxysms" (I, 11). Plutarch, although not a physician, shows clearly that the Hippocratic directions continued to be followed. Malaria was undoubtedly prevalent in his time, and many of the digestive disturbances of his contemporaries may have been due to manifestations of this disease. In his "Rules for the Care of the Health," we find the following: "Emetics and purges are bad. Dieting is the proper remedy for indigestion. If something must be done, vomiting is the less evil, but violent drugs must be avoided. Drinking water or fasting for a few days may be tried, or even an injection. Most people take refuge at once in strong purgatives, and suffer for it."[4]

The Romans give us much more explicit directions for treating fevers. They follow Hippocrates to a certain extent in his expectant method during the height of the paroxysm. Celsus recommended blood letting, while Galen, following Celsus in this regard, also mentions scarification, cupping, purgations, and emetics. The basis of Galen's pathology and diagnosis is the proposition that there is no functional disturbance without organic disturbance. The basis of his treatment is the use of contraries or allœopathy. Consequently, to rid the patient of the fever which raged in the veins and vitals, he attempted to cause the patient to throw it off with emetics and purgatives; and to aid in this, he employed scarification, cupping, and venæ-section. We find him recommending this last measure especially in those high fevers that occur in the spring and fall.

Just what treatment was used through the Middle Ages is uncertain. The clergy, the quacks, and the old women did more prescribing than they do to-day. There were seats of medical learning where the works of the ancients were used as text-books, but the profession was not overworked with holders of medical diplomas. Intermittent fevers were said to be due to some disturbance in the proportion of humors, yellow and black bile, phlegm and blood, which had to be rid from the system by the many drastic measures alluded to above. Mercury was the usual purge, as it is now in this disease. In those dark ages it was given to cast off vague humours; in these enlightened days it is also given "to get rid of the bile"[14] or some equally vague injurious substances which are thought to complicate malaria. But we shall come to the subject of mercury later.

Paracelsus was the first to get away from all these humoral vagaries by substituting methods of spiriting away disease. Influenced by the pharmaceutical chemistry of Valentine,* he also broke away from Galenic tradition by introducing the study of pharmaceutics into medicine. His treatment is as follows:—"If the patient, suffering with a quotidian, tertian, or quartan fever, starts to have a paroxysm, put him to bed, cover him up warm, and fill both his hands full of rye. The patient is then to hold the rye in his hands until it gets wet with sweat and until the fever is all gone, after which it is to be taken away and buried under the fence near a grain field."[10] We assume that if any of the rye was lost from the hands during the rigor, the doctor was not responsible should a cure not be effected. Anyway the patient must have had his mind taken from his symptoms to a certain extent, which is the basis of "Christian Science" and the "Emmanuel Movement."*

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*Basil Valentine, a Thuringian Monk who lived during the fifteenth century, is described by Walsch as "the last of the alchemists, the first of the chemists and the founder of pharmaceutical chemistry" (Walsch, J. J., Old Time Makers of Medicine. N. Y., 1911).

*We should not be too ready to condemn Paracelsus as a quack. Gordon 13 in his history of medicine uses the following words, "Paracelsus was probably the greatest charlatan and mountebank that ever acquired a celebrity in the profession." The question is whether he was sincere. If his cases of ague did better by holding rye in their hands than when bled, blistered and purged,—and they undoubtedly did,—he was justified in assuming that magic was more efficacious or less injurious than the Galenic methods. We should respect his observations in this respect. Control cases are a very recent development in clinical medicine. Moreover, it was natural that Paracelsus should attempt to explain his success. We must bear in mind that many explanations of our modern therapeutic successes are annually shattered by research experiments.

Various charms, such as a blessed amulet, a starved spider, chips of the gallows, etc., were employed by the laity during the sixteenth century to ward off or cure ague.[12] Physicians of rank and learning were by no means loath to employ these measures, as Galen was wont to recommend the wearing of amulets under certain conditions. In this the Galenic doctrines differed from the more rational therapeutics of Hippocrates, who placed dietetics foremost, drugs next, and excluded the supernatural and priestly element from his theory and practice.

Spigelius[11] goes into the treatment in a very thorough manner, covering all the methods advised by the ancients and including a host of the prescriptions used in his own time. He dwells on blood-letting, purgation, and emetics. "The last," he says, "are valuable in benign cases, but should be avoided in the malignant forms." The Pulvis Comitis de Harwick and other preparations of antimony were evidently favorites for internal medication. He also gives indications for the use of clysters, fomentations, and numerous cerates.

To sum up, we may say that, previous to the introduction of cinchona, patients suffering from malaria were subjected to drastic measures of treatment, which, with our present knowledge of this disease, appear to have been anything but helpful. Lucky was the sufferer from intermittent fever who fell into the hands of Paracelsus and his followers, under whose magic, nature was allowed to work unhampered by the crude dosing, bleeding, etc., employed by the learned followers of the ancients, and the advocates of humoural pathology.

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THE DISCOVERY OF THE CINCHONA BARK.

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The first great epoch-making event in the history of malaria was the discovery of the medicinal value of cinchona bark, from which the alkaloid quinin is derived. This tree is indigenous to South America, where it grows in the moist soil along the slopes of the mountain tanges all the way from Columbia to Bolivia. The original bark came from the cinchona forests of the old Peruvian Empire, which, at the time of the Spanish invasion by Pizarro in 1527, extended from the river Ancasmayu north of Quito to the river Maule in the south of Chile. Thus the term "Peruvian Bark" refers rather to the ancient Empire of the Incas than to the present Republic of Peru. The discovery of the remedial virtues of this famous bark is so entangled with conflicting traditions and inconsistent evidence that I cannot refrain from a humble attempt to unravel the threads. The problem reduces itself to the question whether the natives of Peru taught the value of this remedy to the Spanish invaders, or whether the Jesuits who accompanied these ruthless conquerors found out its virtues for themselves.

The earliest record which we have concerning our subject is that contained in the Anatasis Corticis Peruviæ, written by Sebastian Badus and published in Genoa in 1663. The author of this work obtained his information from the manuscript letter of a certain Antonius Bollus, a Genuesse merchant who had visited Peru and traded with the Indians.

Unfortunately the date of Bollus' manuscript is not given, but from it we learn that the bark had been known to the Indains of South America "for a long time," but that they had always tried to keep it a secret from the Spaniards. The secret, however, gradually leaked out, but became known to only a few Europeans. One of these was the Corregidor of Loxa. The bark, however, did not become generally known until it was used in the case of the Countess of Chincon, then vice-queen of Peru. This occurred, according to Bollus, "thirty to forty years" previous to his writing the manuscript, thus placing the date roughly between 1620 and 1630. The story of the cure of the Countess

as derived from this manuscript of Bollus is briefly as follows*:—

It happened that in the city of Lima, which is the metropolis of the Peruvian kingdom, the wife of the vice-roy, who was at that time Count of Cinchon—(those are in error who say it was the Marquis of Mancera),—became ill of a tertian fever, a serious and dangerous illness in that region. The rumor of her illness, as is the case with distinguished persons, spread at once through the city and the neighborhood, and even got as far as Loxa. A Spaniard, then holding the governorship of that locality, heard of the illness of the Countess, and wrote to the vice-roy in cypher that he, the governor, had a certain remedy, which if used would most certainly free the vice-queen of her fever. The vice-roy told his wife of the message, and she at once consented (for we easily believe what we hope will benefit us). The governor was ordered to betake himself immediately to Lima. This he did, and, having been admitted to an audience, confirmed what he said in his letter, and bade the vice-queen be of good cheer and be confident of her recovery if she would but follow his advice. When these words were heard, they deliberated about taking the remedy, which she took, and wonderful to relate, got well quicker than can be told, to the surprise of everyone.

The next account of the bark occurs in an old manuscript found by Condamine in the College of Jesuits of Saint Paul at Lima, which appears to have been written in 1696 by one Don Diego Herrera. This asserts that the bark was known to the natives, and used by them as a remedy for intermitten fever.[20]

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*Footnote—The above is a somewhat abbreviated translation of the following Latin which we admit has offered certain difficulties:

Ægrotabat forte in Civitate Limensi, quæ est Metropolis Regni Peruviæ, Uxor Proregis, qui tum temporis erat Comtessa del Cinchon (falluntur qui Marchionem de Mancera fuisse dicunt) eratque moribus eius tertiana febris quæ febris in ea Regione nedum inquilina est, sed immitis, et periculi plena. Rumor huius ægritudinis (ut sit de Magnatibus) per urbem statim vulgatus ad finitima quæque loca peruasit, Loxamque usque tenuit. Fluxerint, puto, ab eo tempore, ad id temporis, triginta,, vel quadraginti anni.

Præfecturam tum agebar eo loci Hispanus homo, qui de Comitissæ ægritudine certior factus, deliberanit per Litteras maritum Proregem admorere, quod postea fecit, in arcanis scribens sibi esse Remedium quod dam, quo si uti voluisset Prorex, sponsor indubius ei erat, conualiturum eius uxorem, febrique onmi liberanda. Admonuit de hoc nuncio Uxorem maritus, quæ statim annuit, (ut facile credimus, quæ nobis profutura speramus) sine mora iussit acciri hominem, a quo suppelias sperabat, iussusque est ideo, ut nil tempori dato, Limam se statim conferret, quod ipse peregit; coramque admissus, quæ scriptis dixerat, verbisquoque confirmanit, rogans Proreginam, ut bono esset animo, et fidenti, certoque sciret se se conualituram esse, siquidem suo consilio stetisset. Quibus auditis, deliberatum est de sumendo Remedio; quod sumpsit, et mirum dictu, dicto citius conualuit, stupentibus omnibus."2

Condamine, a French botanist, who travelled from Quito to Loxa in 1737, and who devoted much attention to cinchona, credits the natives with the earliest knowledge of the medicinal virtues of Peruvian bark. He learned that the Indians employed the bark in the form of a watery infusion,[4] and he attributed the delay in the use of the remedy by the Spaniards to the hatred which he observed still existed among the natives.*

Joseph de Jussieu,[7] a physician, botanist and mathematician, accompanied Condamine on the journey to Loxa. He seems to have been just as much interested in the question as his companion, and to have arrived at the same conclusion through somewhat different channels. He informs us that it is certain that the Indians about Malacotas were the first to learn the virtues and efficacy of the cinchona.* Unfortunately his writings on the subject have never been published,** so that our information is derived from references to him by his fellow travellers and from a quotation of his manuscript by Weddell. In this letter Jussieu tells the story of a Jesuit who, being seized with an intermittent fever in the vicinity of Malacotas, excited the compassion of an Indian chief, who restored the health of the sufferer

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*Footnote—"I'usage du Quinquina était connu des Américains avant qu'il le fut des Espagnols; et suivant la lettre manuscrite d'Antoine Bollus—les Naturels du pays ont longtemps caché ce specifique aux Espagnols, ce qui est très croyable, vu l'antipathié qu'ils ont encore aujourd'hui pour les conquérants." de la Condamine; Histoire de l'Academie Royale des Sciences, 1738, p. 233.

The history of Peru abounds with stories of the cruelties inflicted by the Spaniards during their conquest of the Peruvian Empire. The following incident of Pizarro's invasion serves to characterize this cruelty, which was not only permitted but encouraged by the Jesuits. Moreover it accounts for the constant mention by authors of the hatred of the natives for their conquerors, which plays an important rôle in the discovery of the cinchona by the Europeans. Pizarro with his 160 followers arranged an audience with the Inca chief Atahualpa at Cajamarca. The Inca appeared on a golden chair surrounded by 8,000 attendants. Friar Vincente Valverde stepped forward presenting the chief with a bible, which he explained through an interpreter was the word of God. The Inca held the book to his ear, and then expressed his disbelief in the statement. At this the priest immediately cried, "To arms, Christians! these infidel dogs have insulted the minister of your Redeemer. The word of God is thrown under foot. Revenge! Revenge!" Whereupon the Spaniards, ready for this cue, began a slaughter of the innocent and unsuspecting natives."

Certium est qui prius notitiam virtutis et efficaciæ hujus arboris habuere fuisse Indos vici Malacatos. His, cum, ob calidum simul ac humidum et inconstantiam temperamenti ac inclementiam, febribus intermittentibus maxime essent obnoxi, remedium tam importuni morbi quæsivisse necessum fuit; et, cum, regnantibus Ingas, fuerunt Indi Botanices periti et virtutem herbarum indignatores acerrimi, facta variarum plantarum experientia, tandem Kinakina corticem ultimum ac fere unicum intermittentium febrium specificium remedium invenere." Quotation of Jussieu's MS. in Histoire Naturelle des Quinquinas. Weddell, H. A., Paris 1849, p. 14.

**The loss of his valuable collections made during 15 years in South America caused Jussieu to go insane, in which state he returned to France in 1771. A work of Jussieu entitled "Reflexions sur deux espèces de Quinquina découvertes nouvellement aux environs de Santa Fe, dans l'Amerique Méridionale," was published in l'Histoire de la Société de Médecine, Paris, 1779, but this refers to two specics of trees no longer included in the genus of cinchona. Ruiz named them Quinquino. From one of them we get the syrup of Tulu.17

by means of a decoction of cinchona bark. This remarkable cure caused the Jesuit to obtain from the Indians a large supply of the bark, which he brought with him back to his fatherland, where it came to be known as Jesuits' Powder.* Markham,[13] in referring to this episode, gives the date of the cure of the Jesuit as 1600.

Antoine de Ulloa[19] was a member of the same expedition with Condamine and Jussieu. Ulloa, however, made no personal investigation into the cinchona bark, but derived his information chiefly from his travelling companion, Jussieu. The latter, he says, was delegated to make a special study of this remedy, a mission which he carried out in all its details, including an investigation into the discovery of its febrifuge powers. Accordingly, we should lay especial stress on the opinion of Jussieu, who, as we have seen, came to the conclusion that the natives were familiar with the remedy and taught the method of employing it in intermittent fever to the Spaniards.**

The next author to give us an account of the subject was Don Hipolito Ruiz, who travelled in Peru in 1778. From the result of his inquiries he arrived at the conclusion that the Indians about Loxa knew of the virtues of the bark and employed it in intermittent fevers many years before the Spaniards conquered

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*Forte fortuna, tum unus ex societate Jesu iter habuerat per vicum Malacatos, is laboran febri intermittente, misericordia commotus Indorum dux, Cacique vocant, cognito R. P. morbo: Sine paululum, inquit, et ad sanitatem perfectam te restituam. Hoc dicto, exilit ad montem Indus, corticem dictum attulit et decoctum ipsius patri propinavit. Sanatu (misprinted senatus) et ad perfectam sanitatem restitutus Jesuita, persquisivit quod genus medicamenti applicaverat Indus. Cognito cortice, hujus non exiquam quantitatem collexit Jesuita, et, ad patriam rednx, eadem ac in Peruviana regione pollere expertus est, inde notus primo fuit cortex Pulveris jesuitici nomine; deinde Pulveris cardinalitii; et, cum simul inter varia fructum et resinarum specimina, fructus arboris Quinaquina attulerat jesuita, fructum arboris fugandis febrius intermittentibus existimarunt; nec jesuita contradicere poterat, cnm arborem nec viderat nec cognoverat; solummodo corticem attulerat; valeatque Quinqnina in febribus fugandis non exigua virtute, Quina-Quina Kina-Kina vocarunt per antonomasiam. Itaque, cnm sit Qnina-Quina arbor toto genere diversa a cortice Peruviano ut videbimus, vel scribatur Kina-Kina usus receptum, ut destingnatur a Quina-Quina; aut melius, cortex febrifugus ac arbor Maurepasia ut cognoscat posteritas quantum Botanices et læta scientia illustissimo comiti de Maurepas debent."

Jussieu's MS. quoted by Weddell in Histoire Naturelle des Quinquinas, Paris, 1849, p. 15.

Sir Clements R. Markham,13 in referring to this episode gives the date of the cure of the Jesuit as 1600, but he is unable to give me the source of this date. His only reference to the subject is the above which we quote in full.

**Ulloa states that Jussieu introduced the remedy among many of the Peruvians, who although familiar with its febrifuge virtues, appeared to be afraid to use it until he had demonstrated to their satisfaction that it was not a dangerous drug.19

the country.* His version of the story of the care of the countess is the most complete oń record. The following is a literal translation of the Ruiz's Spanish found in his Quinologia which was published at Madrid in 1792:—

"During my stay in Peru I heard at different times from various interested and trustworthy persons who had a very reliable tradition, that in the year 1636 an Indian of the province of Loxa told the Corregidor, then suffering from intermittents, the virtue of quinaquina. He, desirous of recovering his health, asked the Indian for the said bark, and inquired from him the method of using it; which was to make a watery infusion with a fixed arbitrary quantity, and to drink of this infusion as the Indians generally do with all their vegetable medicines. Accordingly the Corregidor did as he was instructed, and by this means he became free of the fever, and by continuing the use of the medicine he finally attained the restoration of his health. The same persons assured me in like manner that in the year 1638 the Corregidor being informed of the fact that the vice-queen of Peru was suffering from a tertian fever, he wrote to the vice-king, Count of Chinchon, and sent him a portion of the said bark, informing him of its efficacy and admirable virtue, and the method of employing the same; adding that it would almost certainly cure his wife of the tertian. The vice-roy, being of the opinion that there was nobody better than the Corregidor to administer the remedy, summoned him to Lima, and ordered him to make some experiments with it in the hospitals with other patients suffering from tertians before proceeding to treat the vicountess. Accordingly, in the presence of doctors of the hospitals, the Corregidor carried out the viceroy's orders, and in a few days all the patients who took the remedy found themselves free of their fevers. With such manifest and auspicious proofs, the viceroy determined to give it to his consort, who, desirous of a recovery, did not refuse to partake of it. The result was that in a few days she was free of the fever, and had recovered her health which she had come to despair of during the last six months."[16]

One who stands out prominently in this discussion is Alexander von Humboldt, whose wide range of knowledge and keen powers of observation lend weight to his opinion. In his *Cinchona Forests of South America*,[6] published in 1821, he expresses some doubt as to the details of the story regarding the Countess, especially as to Cannizares' obtaining his information from the Indians. Humboldt himself never saw the bark used

*"Es probable que los Indios de la Provincia de Loxa, tuvieron nociones de la virtue de la Quina ó Cascarilla, y puesto en práctica el uso contra les fiebres intermitentes muchos años antes que los Españoles conquistasen el Perú;....." Quinología, p. 1. See also Delondre, A. and Bouchardat, A. Quinologie, Paris, 1854.

as a medicine by the natives,* except by those employed as bark peelers around Malacotas. Consequently, on the ground that primitive nations adhere with unalterable pertinacity to their customs, their food, and their nostrums, he infers that the natives of South America were not familiar with the febrifuge properties of the cinchona at the time of the Spanish invasion.

Humboldt concludes his remarks with the following timely information:—

"In Loxa there is no document to be found which can elucidate the history of the discovery of the Cinchona; an old tradition, however, is current there, that the Jesuits at the felling of the wood had distinguished, according to the custom of the country, the different kinds of trees by chewing their barks, and that on such occasions they had taken notice of the considerable bitterness of the Cinchona. There being always medical practitioners among the missionaries, it is said they had tried an infusion of the Cinchona in the tertian ague, a complaint which is very common in that part of the country."[6]

Tschudi[16] in his *Travels in Peru* (1847) observes that the inhabitants of the Peruvian forests drink an infusion of the green bark as a remedy for intermittent fever.** Spence informs us that the Cascarillas of Ecuador use the bark solely for dyeing purposes.***

Markham, the eminent historian and geographer, seems to have changed his mind more than once in regard to the discovery. In his *Memoir*[12] (1874), he gives us a version of the cure of the Countess, similar in many respects to the story told by Ruiz, but less detailed. Cannizares, he tells us, sent a parcel of the bark to Dr. Don Juan de Vega, who employed it successfully on the Countess. It is improbable, he says, that Cannizares learned of the bark from the natives, for he is "convinced that the remedy was unknown to the Indians in the time of Yncas.

*"The Indians cure themselves (of ague) by lemonades, by the oleaginous aromatic peel of the small green wild lemon, by infusions of Scoparia dulcis, and by strong coffee;" also, by "an excellent febrifuge, the fruit of a new species of Uvaris, which we have described by the name of Uvaria febrifuga." Cinchona Forests of South America, p. 22.

**"I have found it in many cases much more efficacious than the dried kind, for less than half the usual dose produces, in a short time, convalescence, and the patient is secure against returning febrile attacks." Tschudi, Travels in Peru. N. Y., 1847, p. 280.

***This information is derived from the U. S. Dispensatory, 19th Ed. Phil. 1907, not from the Mythologies of Mexico and Peru, by Lewis Spence, London, 1907, which we consulted for verification. It is interesting to note that Ulloa in his Voyage de l'Amerique meridionale (Amsterdam 1752) remarks that it is held by some that the Indians thought that the Europeans exported the bark from Peru for dyeing purposes, and that "they actually made some trials of its effects in this way."

It is mentioned neither by the Ynca Garcilasso nor by Acosta, in their lists of Indian medicines, nor is it to be found in the wallets of itinerant native doctors, whose materia medica has been handed down from father to son for centuries."[12] He then goes on to remark: "It appears, however, to have been known to the Indians around Loxa, a town in the Andes, about 230 miles south of Quito," citing as evidence the tradition we have already mentioned of the cure of the Jesuit at Malacotas in 1600 by bark given him by the Indians, and, strangely enough, the very part of the tradition which he doubts, namely, that in 1636 an Indian of Malacotas revealed the secret virtues of the bark to the Corregidor Cannizares. Thus Markham appears to reflect doubt on his own contention that the remedy was unknown to the Incas.

In *A History of Peru*,[14] published in 1892, Markham gives us a different version derived from the Jesuit Saldamando, whose *Los Antiquos Jesuitas del Peru* was published at Lima in 1882:—

"A memorable event took place under the government of this viceroy, conferring lasting benefit on the whole human race. The discovery of the febrifuge virtue of the quinine yielding Chinchona trees was due to the Jesuits. The second wife of the viceroy, Donna Francisca Henriquez de Ribera accompanied him to Peru. In 1628* she was attacked by a tertian fever. Her physician, Juan de Vega, was unable to cure her. About the same time an Indian of Uritusinga near Loxa in the government of Quito, had given some fever-curing bark to a Jesuit missionary. He sent some of it to Dr. Diego de Torres Vasquez, who was rector of the Jesuit college at Lima, and confessor to the viceroy. Torres Vasquez cured the vice-queen by administering doses of the bark. The countess left Peru in 1639, but died in Cartigina on her passage home. The remedy was long known as countess's bark, and Jesuits' bark, and Linnæus gave the name Chinchona to the genus of plants which produce it. The bark derived from Uritusinga and the forests near Loxa was for many years the only kind known to commerce, being exported from the port of Payta. It was known as crown bark. But various species of this precious tree are found throughout the eastern cordilla of the Andes for a distance of 2,000 miles. The discovery of Peruvian or Jesuits' bark conferred an inestimable blessing on the human race, and renders the Vice-royalty of the Count of Chinchon forever memorable."[14]

The Incas of Peru,[15] by Markham, published in 1910, contains an account of the Inca physicians. The author pays tribute to the medical skill of the Amautas, the name given to the caste of

*Sir Clements Markham has informed me that this date is an error. It should be, according to Saldamando, "a year after her arrival in 1629."[21]

learned men and scribes of the court. He remarks that the cinchona was certainly used locally as a febrifuge, and that the bark was known and used in the province of Loxa as Quina-quina.*

Having taken up the leading references in the order of their publication, let us now turn to a consideration of certain features of interest connected with the discovery of the remedial virtues of cinchona.

In the first place it is only fitting that we should mention two traditions current among the natives of Peru. One, reported by Condamine in 1738, was that a mountain lion suffering with an ague was seen to chew the bark and thereby effect a cure, thus directing the attention of the natives to its curative virtues. The other, reported by Lambert in 1797, was that some cinchona trees were blown over, and lay in a pool, the water of which became so bitter that none could drink it. One of the inhabitants of the neighborhood, however, being seized with a violent paroxysm of intermittent fever, was forced to quench his thirst with the water. His prompt recovery drew the attention of the Indians to the curative property of cinchona.

Secondly we can well afford to devote a little space to the famous Countess after whom the cinchona tree was named. Bollus informs us that after her notable recovery the Countess was approached by the authorities of the state and asked that she give her endorsement, and that she use her influence to make it known, in order that that medicine which had so wonderfully brought about her recovery might be of similar benefit to others suffering with that same kind of fever.[1] The Countess appears to have been willing to do this. Furthermore, so greatly did she treasure the bark that she collected a goodly supply. On her leaving Lima in 1639, she left part of this with her Jesuit advisers, and the rest she carried back to Spain in 1640, as the story goes, to distribute it there among the sick on her

*"The Amautas also had an extensive knowledge of the use of medicinal herbs and roots, and their advances in surgery are attested by the discovery of skulls at Yucay and elsewhere on which the trepanning operation had been performed. They used infusions of several herbs as purgatives and stomachics, as well as the root of a convolvulus; other herbs were used, for colds and pulmonary complaints, and salves were used, consisting of leaves and seeds of certain plants dried, pounded, and mixed with lard, some for wounds, others for rheumatism. For fevers they used several tonics, including a gentian. The chinchona plant was certainly used locally as a febrifuge, but not, I think, universally. In the Loxa province the bark was used, and known as Quina-quina. In the forests of Caravaya an infusion of the Chinchona flowers was given for ague, and called **yara chucchu.** The name **calisaya,** the species richest in quinine, is derived from two Quicha words: **Cali,** strong, and **sayay,** to stand." The Incas of Peru, Markham, C. R., p. 156-157.

lord's estate.[12] According to Markham, her charity is evidenced by local traditions in and about Cinchon* of the cures effected by the Countess' Powder (Pulvis Comtissæ), by which name the bark came to be known.[12] Whether she and her husband brought home a very large amount, or whether there were few cases of fever about Chinchon, or whether the Spaniards refused to take the drug, the fact is clear, according to a publication of Sir George Baker[3] in 1785, that a considerable quantity of the substance remained in the hands of the family many years after the Count and Countess were dead.**

Condamine informs us that Dr. Don Juan de Vega, physician to the Countess, followed his patient to Spain a short time later, bringing with him a supply of the bark, which he sold at Seville for 100 reals a pound.

An interesting point comes up here in regard to the spelling of cinchona. Condamine, who was the first naturalist to describe the tree, sent specimens to Linnæus, the great Swedish botanist. Linnæus wished to name the tree after the famous Countess, but he mistook the spelling of her title. Thus he gave the name Cinchona, Quinquina Condamin, to this new species, which appears for the first time in his *Genera Plantarum,* published in 1742. Markham, in his "Memoir of the Lady Ana de Osorio, Countess of Chincon and Vice-queen of Peru," suggests that Linnæus strove to correct this mistake only to fall into a graver error, because in the edition published in 1767 at Vienna, the name reads "Cinhona, Quinquina Condamin." This must have been the fault of the printer, as we find the old spelling Cinchona on page 69, and in the index of this same edition. Had Linnæus attempted to correct his original error he undoubtedly would have changed the original spelling on page 69 and in the index,—the only other two places where the name is used. We are inclined to trace this mistake to the earliest publication on cinchona which we have, namely, that of Sebastian Badus where he refers to the lady as the "Comtessa del Cinchon." In his *Memoir,* Markham makes the following fervid plea for the correction of Linnæus's error:—

*The Castle of Chinchon lies near Madrid.

**The story of the cure of the Countess has been made the basis of a poem by Walekenaer in his "Vie de la Fontaine," and it also serves as a background for a novel, "Zuma," written by Madame de Genlis. The latter has disregarded both tradition and fact for the sake of fiction.

"I plead for the correct spelling, as tribute of respect to a great historical family, now passed away; as a right which may justly be claimed by the people of Chinchon; and as the only way by which the memory may be preserved of her who made known to the world the inestimable value of quinquina bark, who was thus a benefactor to mankind, but whose monument has been destroyed, whose place knows her descendants no more, the illustrious and beautiful lady, Ana de Osorio, fourth Countess of Cinchon."*

Though the Countess of Chinchon has generally had the credit of introducing the bark into Europe, there seems to be some doubt as to whether she ever returned from Peru to Spain. Indeed, her very identity is in dispute. We have seen that Sir Clements R. Markham, in 1874, declared that the person meant was the beautiful Ana de Osorio, but that more recently (in 1892) he follows Saldamando and identifies the Countess with Dona Francisca Henriquez de Ribera, who died at Cartagina** on her way to Spain, in 1639. Linnæus's original spelling has remained in botanical and pharmacological literature up to the present day, and its acceptance by the Council of Ghent gives it the stamp of final authority. The family of Chinchon has long been extinct, and to attempt a change at this date would only cause trouble and confusion. Moreover, it appears from evidence presented in this and the following chapter, that the Countess, whoever she may have been, was by no means the first to "make known to the world the inestimable value of quinquina bark," if, indeed, she had much of anything to do with the matter.

Now that we have passed in review all the evidence available, let us see if it throws any light on the discovery of the most reliable and one of the most valuable drugs in medicine.

In the first place, we have the legends of the natives, which reflect credit on the intuitive powers of these primitive peoples of South America, and make no mention of Europeans. It is, of course, possible that such traditions could have come into existence even though the Spaniards introduced the bark as a remedy among the natives; but it is at least improbable.

In the second place, we have two traditions; one regarding the cure of a Jesuit at Malacotas in 1600 by bark given him by

*Lady Ana de Osorio, widow of the Marquis of Salinas, married in 1621 Don Luis Geronimo Fernandez de Cabrera y Bobadilla, fourth Count of Chinchon, viceroy of Peru from 1629 to 1639.

**Cartagina is a flourishing city in the present Republic of Columbia.

a native—the earliest cure of a white man mentioned;—the other of the cure of the Corregidor Cannizares, who also obtained the bark from an Indian of Malacotas. Then we have the statement by Humboldt[6] that only the Indians about Malacotas had any confidence in the curative value of cinchona bark. Humboldt considers that the bark-peelers of Malacotas learned the virtues of the bark from their white employers. It is rather striking that the native bark-peelers of Loxa and Guanccabamba had no confidence in this remedy at the time of Humboldt's expedition and would die rather than have recourse to it.[6] As emphasized by this scientist, primitive peoples adhere with great pertinacity to their traditions; yet it must also be remembered that neighboring tribes often have quite different customs and nostrums. Consequently, we cannot but be impressed by the relation of these two traditions to the observation of Humboldt. This relation suggests the possibility that the Indians about Malacatos were the only ones who ever knew of this remedy, and that they alone, therefore, handed down the traditions of its usefulness.

In the third place, the earlier travelers and scientists who have written on Peru voice the opinion that the remedial virtues of cinchona in intermittent fevers were known to the natives at the time of the Spanish invasion. The earliest mention of our subject is made by a Genoese merchant, Antonius Bollus, who traded in Peru, and whose manuscript letter is referred to in the Anastasis Corticis Peruviæ of Sebastian Badus, published in Genoa in 1663. According to this letter, the natives of Peru kept the remedy a secret from the Spaniards for many years; thus implying that the Indians were the original discoverers of its virtues, and that they later imparted their knowledge to the Spaniards. Condamine, Jussieu, and Ruiz studied the subject during their stay in Peru, and all found sufficient evidence to convince them that the Indians were the original discoverers of the value of the bark as a febrifuge. Humboldt alone stands as the consistent champion for the theory that the bark was unknown to the Peruvians at the time of the Spanish invasion, basing his argument on his own observation that the bark was not generally used as a febrifuge by the natives at the time of his expedition. We have already discussed the significance of the fact that the bark was used locally about Malacotas, and

we need only add that other travelers have seen the Indians employing various infusions of cinchona in intermittent fevers, and that Markham is of the opinion that the febrifuge powers of the bark were known to the Incas about Loxa.

In the fourth place, the etymology of the names of the cinchona among the Indians is more than suggestive of the natives' valuation of this remedy. Jussieu informs us that they call it *yara-chucchu,* or cava-chucchu, *yara* meaning tree, *cava* meaning bark and *chucchu* being their word for intermittent fever. Thus they called the cinchona the intermittent fever tree, and its bark the intermittent fever bark.* As to the derivation of the term quina-quina, the word *quina-ai,* according to Condamine, designated a kind of cloak or covering of the Indians, and was applied metaphorically to the bark of a tree. The repetition ot the word in quina-quina serves as a superlative, thus implying a very special bark or the best of bark.**

Finally, a word as to the probability of the Jesuits being the original discoverers of the remedy. The tradition recorded by Humboldt to the effect that the Jesuits were in the habit of chewing the barks at the felling of the trees, and were thus attracted to the bitterness of the cinchona, and that as a result they tried it as a remedy in ague, is almost as great a feat of imagination as the tradition regarding the mountain lion. In the first place, many of the barks of South American trees are intensely bitter; secondly, the act of "chewing" some of these barks is sufficient to produce considerable discomfort, more especially the cinchona bark, and anyone who did much chewing (which we are told was their way of tasting the bark in the forest), would probably give up the habit of chewing barks or he would give up the habit of felling trees altogether. Thirdly, the idea that these Jesuits should experiment with this bark in the numerous fevers which occur about Loxa and so promptly arrive at the conclusion that its efficacy lay in cases of ague is granting too much sagacity to the members of that ecclesiastical order who were wise enough to recognize a good thing when it was pointed

*"Nec alio nomine apud illos arbor nota quam ab effectu. Vorarunt yarachucchu, cava-chucchu. Yara idem est ac arbor; cava idem est ac cortex; chucchu: horripilatio, frigus, febris horripilatio; quasi diceres arbor febrium intermittentium." Joseph de Jussieu. MS. quoted by Weddell.

**I am informed by Sir Clements Markham that this reduplication is used in all medicinal barks.

out to them, and to introduce the same into Europe. It is indeed worthy of note that Jussieu, Condamine, and Ruiz did not hear of this tradition, in spite of the fact that they made very special inquiries into the traditions connected with the discovery. Moreover, it is our opinion that, had the Jesuits discovered the remedy for themselves, they, being the scribes, would most certainly have given themselves the credit; and this religious order would have honored the man who made the discovery by handing down his name to posterity, to say nothing of making him a saint. The only name of a Jesuit mentioned in regard to the discovery is that of Torres Vasquez, of Lima, who, we are told, obtained the bark from the natives.

We may state in conclusion that the circumstantial evidence from which we must judge favors the theory that the Indians about Malacatos were the first to discover the value of the cinchona bark in malaria, and that owing to the cruel methods employed in the subjection of the Peruvians they did not impart their knowledge of this invaluable remedy to the Spaniards until the beginning of the seventeenth century.

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THE INTRODUCTION AND EARLY USE OF CINCHONA BARK.

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The date commonly assigned to the introduction of cinchona bark into Europe is that of the return of the Count and Countess of Chinchon from South America in 1640. It appears, however, from a letter written in 1663 by a Spanish physician, D. Joseph Villerobel,[1a] that this bark was first brought to Spain in 1632, and that it was administered with success to a certain ecclesiastic of Alcala in the year 1639. The veracity of Villerobel would seem to be borne out by the traditions,—already referred to,—that a Jesuit was cured of a fever by means of the bark at Malacotas, in South America, in 1600.[2] It might be argued that de Vega could only have obtained the high price he did at Seville if the therapeutic virtues of the bark had been known by previous experience with it in that country. This is suggested by the proximity of Seville to Alcala.

Like all discoveries in the field of medicine, the Peruvian bark was coldly received by the profession at large. Coming as it did from so distant a part of the world, and imported by the laity and clergy as a "cure," it is not surprising that the learned should have sneered at this exotic drug. The dawn of clinical research in therapeutics was still far distant. The medical profession clung to the doctrines of the ancients, venturing upon new methods only when they originated from their own ranks. Consequently when this new remedy gained a reputation for its febrifuge properties, the enemies of novelty promptly sought passages among the ancient authors to confirm and encourage their opposition; while those who ventured to patronize it likewise scanned their volumes of classics for some Greek quotation which could be construed as evidence in their favor.

The coldness with which the bark was received by the Spanish physicians, however, was counteracted by the zealous activity displayed in its behalf by the Jesuits. This religious order received shipments from their brethren in South America, supported and extolled its virtues with all the weight of their powerful influence, and dispensed it at no small pecuniary profit to their institutions.[3] In 1643 John de Lugo, a Spanish Jesuit, was

promoted to the rank of Cardinal. Through the diligence of this dignitary, Pope Innocent X was persuaded to order an investigation relative to the harmlessness and curative virtues of the new drug. As a result of this inquiry,—the credit of which belongs undeniably to the Jesuit Order,—the Pope's first physician reported that the bark was "both innocent and salutary." With such a recommendation from the highest medical authority, all opposition from the profession ceased in the domain of the pontiff, and Rome became the emporium for cinchona. In 1650 the Father Provincial of the Jesuits returned from South America with a large supply, which he dealt out to his brethren at a convention held in Rome. These returned with their parcels of the febrifuge to dispense it in their respective countries.

The Jesuits' Powder (Pulvis Jesuiticus, Pulvis Patrum or Pulvis Cardinalis) was not long to enjoy such favor, for it so happened that in 1652, the well-known Leopold, Archduke of Austria and Governor of the Low Countries, fell ill of a "double quartan fever," for which the bark was administered according to the Schedula Romana.* This important personage seems to have experienced relief for over thirty days, at the end of which time he suffered a relapse, which so disappointed him that he directed his physician, Chiefletius, to report the case with the idea of discouraging the use of the drug. Chiefletius cheerfully acquiesced, publishing his book in 1653. He attacks the extolled virtues of this remedy by weight of argument and experience; maintaining that it had proved a failure in Brussels, and that in Naples, Florence, Madrid, Vienna, and Paris complaints as to its infficacy and even deleterious effects were being made. The medical profession seems to have welcomed this work with a sense of relief. It was reprinted in Paris where it met with a cordial reception.

Strangely enough, the answer to Chiefletius was not to be made by the famous doctors of the prelate's court. Cardinal de Lugo saw fit, for some reason, to entrust this task to Fabra, a French Jesuit and philosophical writer. Under the assumed name of Antimus Conygius this author affirmed that, in the year 1653,

*The Schedula Romana was to give two drachms of the finely powdered bark just before or at the beginning of the paroxysm. It also suggests infusions with wine or water, and giving the powder in the form of a bolus. It contains general rules of dosage according to the age and individual case. Torti, Therap. Specialis. 1712, p. 4; Werlhof. Observationes de Febribus præcipue intermittentibus. 1764, p. 88; Baker, Trans. College of Phys., Vol. III, 1785, p. 152.

thousands of patients had been cured in Rome by means of the Jesuits' Powder, adding much in the way of speculation to explain its virtues.[1b]

A vicious reply to the Jesuit Fabra was published by Vopiscus Fortunatus Plempius, Professor of Physic at Lovain, under the name of Melippus Protimus. The efforts of this author against the bark were the results of prejudice and malice, in contradistinction to the more temperate hostility of Chiefletius. Plempius committed a further error in judgment by openly attacking Harvey's discovery of the circulation of the blood.

This controversy* brought the bark into such disfavor among the medical profession and the laity that its use was chiefly confined to the papal domain. On the other hand, we now begin to hear of a scarcity of the drug. The Jesuits appear to have had a monopoly of the supply, and their price was such that it was deemed a suitable gift for princes. In 1650 it was said to be sold in France "weight for weight at the price of gold." In 1658 twenty doses were sold at Brussels for sixty florins.[4] Even at Rome we find Cardinal de Lugo, himself, in a letter to Badus, complaining of its scarcity and the danger of adulteration. Sturmius, who practiced in Antwerp and was one of the few advocates of this remedy, had a patient who was seized with an obstinate intermittent fever in February, 1658. It was not until the end of the following June that he could procure the bark. Three years later he published his Febrifugi Peruviani Vindiciæ. Bartholin, of Copenhagen, reports, in 1661, that he employed three doses, given him by a friend returning from Italy in a case of quartan fever with little benefit.

In England the introduction of cinchona was rather more gradual than in Spain and Italy, nor do we find any such violent opposition to it on the part of the medical profession. According to Sydenham, the bark came into vogue about the year 1655, but soon fell into disrepute owing to its inefficacy in preventing a relapse, and also because of some fatalities which followed its administration immediately before the paroxysm. One of these

*For writings on this controversy see: Cortex Peruviæ Redivivus (profligator febrium, assertus ab impugnationibus Melippi Protimi, Medici Belgæ) a Sebastiano Baldo, Medico Genuense, Genuæ, 1656; Anastasis Corticis Peruviæ, seu Chinæ Chinæ defensio, Sebastiani Badi Genuensis, Genuæ 1663). (These two works are by the same author, whose name is spelled so differently. In the copy of the latter which I consulted at the British Museum the spelling Badi has been written in above the printed Bado. The preface is signed Badus, Genuæ Dec. 1, 1663); Torti; 9 Mautt De Cortice Peruviano, Roterodam, 1760; Baker, p. 174.3

victims is thought to have been an alderman of London, who died in 1658. An epidemic of remittent fever occurred throughout England in this year, and the bark suffered in its reputation because it failed to be of benefit. Oliver Cromwell "died of a sickness of fourteen days, which had appeared an ague in the beginning."[3] The bark was not administered, so it seems, because of certain recent fatalities following its use, although Morton asserts that the failure to use it in this case was due to the fact that it was not yet approved of. This testimony is not in keeping with the fact that in 1658 the "Fever bark, commonly called the Jesuits' Powder," was advertised in a periodical newspaper* of London with the approbation of Dr. Prujean, who had held the position of President of the College of Physicians for no less than five successive years. Willis, in the second edition of his "De Fermentatione et de Febribus" (published in 1660), observes that this remedy suspends the paroxysms, but does not subdue the fever. Consequently, when Morton states that cinchona was introduced into medical practice in 1665, we are forced to doubt his accuracy. Moreover, in a letter to Sydenham, dated 1679, Brady, who was Professor of Physic at Cambridge, writes that he had used the bark successfully for about twenty years.[3]

Sydenham took up the bark very cautiously. He was at first inclined to be prejudiced against its use, but influenced by the reports of his contemporaries and his own successful administration of the remedy, he gradually came to be its ardent supporter, although he never relied on it alone in cases of ague,—with the exception of quartans. He seriously objected to the use of the bark during the paroxysm, insisting that to do so too hastily checked the fermentation of the blood, and thus was a source of imminent danger to the patient. At the same time, he emphasized the importance of interrupting the regular process of the paroxysm in tertian fevers by simultaneously purging and sweating. On the other hand, he instituted the procedure of taking two drachms daily during the intermission, which he later modified to two scruples every fourth hour. He was thus the first to advocate the fractional dosage of cinchona, a method which, in the case of quinin, is now being employed by the fore-

*"Mercurius Politicus, comprising the sum of foreign intellgence with the affairs now on foot in the three nations, for the information of the people. From Thursday, December 9 to Thursday, December 16, 1658," quoted by Sir George Baker. Transactions, College of Physicians, London, 1785, Vol. 3, p. 190.

most authorities on malaria in contradistinction to the single large doses given just previous to the paroxysm.

In order to appreciate the medical thought of this great writer and observer, the following quotation is given from his works:—

"And first, that we may at least make some conjecture about the nature and genus of agues, it is to be observed that these three seasons are to be considered in the fits; first, the time of shaking; secondly, of Ebulition; thirdly, of Despumation. To speak briefly of these things, I suppose it proceeds hence, viz: because the febrile matter, not as yet turgent, was in some sort assimilated by the mass of blood; and being at length not only useless, but become an enemy to nature, does in a manner exagitate and provoke it; whence it comes to pass that being stirred up by a certain natural sense, and as it were endeavoring to escape, it causes a shivering and shaking in the body, a true witness of its aversion, just as purging potions taken by squeamish persons, or poisons casually taken, use presently to cause a shivering, and other symptoms of that kind."

"All agues begin with shivering and shaking, and are presently succeeded by heat, and then sweat; the sick most commonly vomits both in the cold and hot fit, is very sick, dry and thirsty, and his tongue is very dry, and the like; all which symptoms retreat by degrees, as the sweat comes on; and when it is very plentiful, the fit seems to be at an end, and he that was just now sick seems to be very well, till the fit returns at its wonted time, viz., a Quotidian once every natural day, a Tertian every other day, a Quartan every third day, reckoning from the beginning of one fit to the beginning of the next, though often the last two are doubled; so that a tertian invades daily, the Quartan two whole days, the third being free from a fit; and sometimes also it comes for three days together, when it is a triple Quartan, the ague taking its name from the shape it first assumed, which doubling of the fits sometimes proceeds from the excess and too great activity of the febrile matter, in which case the adventitious fit comes before the first, sometimes also from the loss of strength, the patient being much weakened, and the vigor of the fit broken, either by cooling too much, or by evacuation above measure."

"For in the winter time the spirits are concentrated, and in their recess gather strength, which being now brisk, the heat of the approaching sun draws out, and being mixed with the viscid humours, (yet they are not so viscid as those in the fall, the heat foregoing as torrefied), which nature during winter had heaped up in the mass of blood, while they endeavor to fly away, are, as it were, entangled, and so cause the vernal ebulition, as vessels full of beer kept long in a cold cellar; if they are set near the fire, presently begin to work, and the liquor is apt to fly."[5]

Morton followed Sydenham as the most eminent supporter of the Peruvian bark. In his Pyretologia,[6] published in 1692, he

takes an extreme position, asserting that during twenty-five years he had employed this antidote in every season of the year; that, with three exceptions, it had never failed to accomplish a speedy and permanent cure in all forms of intermittents; and that the only mischief he had seen it produce was a temporary deafness. His method was to give one drachm every three or four hours during the interval, "because at that time it may be taken without exciting nausea, and is more certainly retained; and that the virtue of the antidote is conveyed into the body entire, and with great advantage, whilst the poison lies dormant and inactive."[6]

Lister, a contemporary of Sydenham and Morton, did not approve of the way in which these two physicians advocated this nostrum of a quack. The quack referred to was no less a person than Robert Talbor, alias Tabor. Sydenham indirectly condemns this man for concealing his specific for intermittents, while Morton refers to him in the most contemptuous terms.

Talbor[3] learned an effectual method of administering the bark while serving as apprentice to an apothecary. He entered St. John's College at Cambridge in 1663, where he seems to have had but a short stay. He then set himself up in Essex, where he gained a reputation for curing agues. A few years later he removed to London, where, by his success in these cases, he won the favor of Charles II. On May 2, 1678, by order of his majesty, Arlington commanded the College of Physicians "that you should not give him (Talbor) any molestation or disturbance in his practice," and had him sworn one of his court physicians.[3] It is interesting to note that Sydeham was prejudiced against the bark in 1668, and that it was not until 1680 that he arrived at his most effectual method of giving it. Talbor published a book, entitled "Pyretologia," in which he surreptitiously cautions his reader "to beware of all palliative cures, especially of that known by the name of Jesuits' Powder, as it is given by unskillful hands," adding, nevertheless, "yet is this a noble and safe medicine, if rightly prepared, and administered by a skillful hand."[3] Toward the close of his career he spent the greater part of his time in France. Here his practice was no longer confined to fevers. Persons of the highest rank, including members of the royal household, employed him. Finally, Louis XIV is said to have paid him 48,000 pounds for the secret, and published it for the benefit of his subjects after Talbor's death, which oc-

curred in 1681. This nostrum vender had been raised to knighthood, had served as physician to the courts of England and France, and had a monument erected to his memory in Trinity Church, Cambridge. The secret proved to be an infusion of the Peruvian bark with some aromatics in red wine to be administered during the paroxysm.[3] He is also said to have combined the bark with opium.[7]

Gideon Harvey is another important personage of this period. Although a doctor of medicine and a practicing physician, he outranks Moliere and Bernard Shaw as a satirist on the medical profession. In his Conclave of Physicians,[8] published in 1686, he displays a profound contempt for the commercial doctor, the anatomist, and the theory and practice of the eminent men in the profession. Harvey was not a very learned man, and he was certainly much given to advertising himself. On a question of pure medical theory his evidence might well be discredited. For the present investigation, however, he is not without significance, for he had no ascertainable reason to misrepresent contemporary conditions, as to which alone he is here cited as witness. He informs us that the virtues of the Peruvian bark in quartans had been known for over a hundred years, and that it was revived by a "debauch'd apothecaries apprentice of Cambridge, in application to all intermittent fevers."

Harvey himself evidently held a rather poor opinion of the bark, maintaining that many a patient had been "Jesuited to an early grave." He accuses the Jesuit Order of keeping the source of the "chinchina bark" secret, with the result that no one could obtain it except from their supply. According to him, it was dispensed at a crown an ounce, and the parcels sold on the market differed from one another in color, taste, weight, resin, etc., "by which men of art have been frustrated in their cure of agues."

His remarks regarding its use and abuse are not without interest. "The decoction, or infusion of the bark, doth manifestly heat any that shall take it in the state of health." He asserts that it is not only useless, but deleterious in continued fevers, and that it is indicated only in intermittents. The ague fit being due to "an high ebulition or fermentation," the bark acts as a "specific styptic," as well as by its purgative qualities. The dangers of its use in agues lie in the too sudden suppression of the

fits; consequently he recommends that small doses be given often, that it be discontinued a day or two after the fits cease, that after three weeks a few small doses be taken, and again after six weeks. Although Harvey professes to be able to get along well enough without the bark in cases of ague, it is significant that he should have found it most useful in divided doses, and also that his observations regarding its specificity in agues, its effects on the healthy body, and its variable qualities in commerce precede similar observations from more distinguished writers of a later date.*

The interest in malaria and cinchona at this time was by no means confined to England. In 1712, Torti,[9] an Italian, published an extensive treatise on fevers, in which he lays especial emphasis on the value of "china chinæ" in intermittents. This author practiced in Modena, where he seems to have gained a wide experience with the simple and pernicious forms of malaria, though Celli informs us that to-day this city is comparatively free from the disease. Torti takes up the history of intermittents, and the introduction of the Peruvian bark with the arguments raised for and against it, and he finally classifies the fevers into two main groups; namely, those which do and those which do not yield to the bark. According to him, all fevers benefited by cinchona come under the head of intermittents. Although he takes up the various diseases in which the bark was used by his predecessors and his contemporaries, he maintains that it can be relied on only in intermittents. "Nothing," he says, "is better known at our time in medicine, nothing more certain, than that china china dispels intermittent fevers."* If we substitute quinin for china china and malaria for intermittent fever, we must confess that the words of Torti, written two hundred years ago, apply to the present status of medicine as well as they did to that of his time.

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*The specificity of the bark, in intermittents was noted by Lancisi; the relative difference between the specimens of Peruvian bark was brought out by Saunders; the sense of internal heat produced by taking the bark in a state of health was emphasized by Hahnemann; the superior efficacy of fractional dosage has been established by Nocht. It is interesting that Harvey should have given the bark after an interval of three weeks, because we now recognize that relapses are apt to occur in about three weeks following a quinin cure, a fact which will be explained when we come to the morphology of the malarial parasite.

*"**Ab eo autem tempore coepit adeo clarescere in dies hujusce fama Febrifugi, ut jam nostro ævo nil notius sit in Medicina, nil certius quam Febres Intermittentes China China depelli.**" Francisci Torti, Therapeutice specialis. Mutinæ, 1712, Lib. I, Cap. I, p. 5. (Torti lived from 1658 to 1741).

Torti quotes from a letter of Lancisi's in which the latter remarks that in Rome, in the year 1695, the bark proved to be a specific antidote to an epidemic fever caused by stagnant waters. In 1717, Lancisi published his famous work in which he distinguished malaria from other fevers by its etiology.** His observations left him to infer that the common epidemic fevers about Rome were due to the emanations from swamps and marshes, hence the terms "paludism" and "malaria." He even went so far as to suggest that insects such as mosquitoes might be responsible.

There are many other works on intermittent fevers written during the eighteenth century, but in none of them is there anything new. Senac, Medicus, Werlhof,[10] and Stork[11] discussed the pathology and symptomatology. Huxham, Pringle,[12] Van Hoven, Home, Alibert,[13] Santorini, Albertini, Lind, and Cullen[14 15] took up the etiology and treatment.

In regard to the time of administration of the bark and the dosage, we find the same divergence of opinion that exists to-day. The reasons for this divergence, moreover, were due to the same causes which influence modern medical thought, namely, different conceptions as to the nature of the disease and the modus operandi of the drug, and different clinical observations on the part of individual physicians. Thus Sydenham based his treatment on the idea that the cathartic property of cinchona removed the "turgent febrile matter." Torti[9] was not satisfied with this explanation, as he noticed that other cathartics did not have this specific curative power in intermittents, nor did the bark neessarily have to produce catharsis to effect a cure. From his large experience he concluded that small doses given a considerable time before the paroxysm acted with better effect than larger doses given just before the paroxysm, although he admitted that the latter method sometimes produced good results. His method was to give two drachms just after the fever subsided, then one drachm the following day, to be followed by a drachm every other day during the second week.

Home gave the bark in one series of cases just before the paroxysm, and in another just after it. He found that the bark "was never more certain in its operation than when it is admin-

**Lancisi, Joannes Maria (1654-1720). Denoxiis paludum effluviis, eorumque remediis, Rome, 1717.

istered immediately after the close of one paroxysm, or forty hours before the commencement of the succeeding one."[13] Alibert preferred this method, remarking that "the success of the bark depends less on its quantity than on the manner in which it is exhibited."[13] Lind advocated giving opium during the paroxysms, to be followed by a dose of the bark when the fever had subsided. Saunders, who seems to have had admirable success with the red bark, uses the following words:—"It is seldom I have found it necessary to give more than half a dram every two hours in the interval of the fit, and in no one intermittent, even of a Quartan type, have I found it necessary to give more than six drams between the paroxysms."[4] Withering, in a letter to the last named author, remarks that he never had occasion to give more than thirty or forty grains every four hours between the fits.[4]

Werlhof[10] noticed that relapses usually took place after three weeks in tertians and after four weeks in quartans. From this observation he suggested renewing the administration of the bark at the time of the expected relapse. Alibert[13] confirmed Werlhof's observations, but he suggested that as the bark acted as a prophylactic, it should be given one week before the expected relapse.

We cannot go into all the various theories as to the modus operandi of the bark which were propounded during the eighteenth century, but it will be of interest to note the general trend of thought. We have seen that Torti criticized the speculations of Sydenham regarding the cathartic properties of cinchona. Brown[13] maintained that the bark acted as a stimulant or general tonic. Saunders remarks that "it seems more reasonable to refer its action, as an antiseptic, to its tonic power on the moving system, than to any primary action on the animal fluids."[4] Alibert takes exception to the hypothesis that cinchona cures intermittents by its antispasmodic action, on the ground that the more reliable antispasmodics showed no curative powers in these cases. Albertini advanced the explanation that the bark worked by exciting definite critical evacuations either through the sweat, stool or urine, which differed from the crises produced by other drugs in this disease.[13] A few words from Cullen's Lectures on Materia Medica, published in 1773, will show how little progress was made in the theory and practice pertaining to

our subject since the time of Sydenham. We must not confuse the term antiseptic as used by Cullen with the bactericidal meaning which it conveys to-day.

"I am very ready to allow with Dr. Pringle that a putrescency accompanies Autumnal Intermittents, and that the bark is noted for its antiseptic quality. But the small quantity given, and still more, the very small quantity extracted, and the little that must be absorbed of that quantity extracted, to me would seem to have very little effect in preventing the putrescency of the fluid. Much more do I imagine (and Dr. Pringle consents to it, and enumerates other astringents which have the same property) that the bark, in such cases, acts by restoring tone to the fibres, debilitated by the putrefaction."[14]

Hence its usefulness in all putrid fevers, continued or otherwise, and in "putrid diatheses," although he considered it of greatest value when distinct remissions occurred. His practise in intermittents was to give emetics during the chill, opiates during the fever and Peruvian bark with "metalic tonics" during the apyrexia.

Polypharmacy was at its height at this time. The recognized fact that cinchona was a specific in malaria did not deter practitioners from mixing this medicine with other drugs. Opium and mercury were the most commonly used adjuvants to the bark, although alum, iron, antimony, cayenne pepper, chamomile, and a host of others were prescribed.

Much discussion took place regarding the use of mercury. Sydenham remarked that "to add anything to the bark argues either ignorance or craft."[3] It is perfectly obvious, however, from his writings that he did not practice what he preached, or he must have admitted himself a sinner in one or the other respect. He did not consider a preliminary mercurial purge to be always necessary for the action of cinchona. Stork, Pringle and Senac strongly advised that the viscera be well emptied by mercury in order that the humours might not be pent up by the astringency of the bark. Saunders, on the other hand, deplored any delay in the giving of cinchona, claiming that in the intermittent fevers of "low and marchy situations," "the use of either emetics or purgatives, as preparatory, is not only unnecessary, but in some cases productive of greater debility, and therefore to be avoided."[4] Of all the drugs used in the seventeenth century none was more abused than mercury. It was natural that the

purgative powers of calomel should have been used to rid the body of humours, but we are horrified at the enormous doses so often carried to the extent of bloody evacuations and salivation to the satisfaction of the prescriber.

The ancient therapeutic measure of bleeding was still practised on a large scale. Torti was the first to object to this procedure in intermittents, but he admitted that under certain conditions it was advisable. Every other writer of the eighteenth century gave indications for venæsection in fevers, agreeing that it was of the utmost value when the blood drawn off was "fizy."

Two notable substitutes for the bark were brought forward during this period. Renaud and Homberg in France found galls of great service in agues, and explained the benefit derived as due to the astringent properties which cinchona also possessed. The Academy ordered Lemery, Geoffroy and other members to make a trial of this drug, and their report was that galls did cure intermittents, though not so constantly as the Peruvian bark.[14] The other substitute was arsenic. In 1786 Fowler introduced his "mineral solution,"—now known by the author's name as "Fowler's Solution,"—as a cure for agues and periodic headaches. He cites no less than 247 cases treated by him in private and hospital practice, giving tables of the results. His conclusion was that this medicine was as efficacious as the bark when given in 12-drop doses two or three times a day. A contemporary condemns the use of this substance with the remark that "it cannot be deemed to be a proper remedy for an intermittent fever, whilst an intermittent fever is less formidable than arsenic."[3] This same author does not object to the use of mercury to the point of salivation.

Cardinal de Lugo was the first to call attention to the danger of adulteration of Peruvian bark suggested by the great and sudden demand for it throughout Europe.* The first bark brought over was the red bark from the trunk of the cinchona tree. Later, however, the quill bark from the branches was introduced with success, but owing to the increased demand it was adulterated, after which it naturally became less efficacious. As we

*Epistola Juan Cardinalis de Lugo al Signor Sebastiano Bado. Rome, October 4, 1659. Incorporated in the first chapter of the Anastasis Corticis Peruviæ of Badus.1a

have already seen, Harvey maintained that the differences in the bark sold on the market accounted for many of the failures by physicians to cure agues. It seems that the red bark went out of fashion, and during the period that the quill bark took its place there was considerable dissatisfaction. Finally, William Saunders brought to the attention of the profession in England the fact that the red bark was that used by Sydenham, Morton and the other early pioneers who claimed such good results from it, and that in his own practice and hospital cases he had found the red bark efficacious in agues where the common bark sold on the market had been used previously in vain.[4] Corrected in this matter of pharmaceutics, cinchona again gained favor among the physicians and we hear little more criticism of its value in malaria.

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CONCERNING ARSENOBENZOL.

FROM THE PHARMACEUTICAL LABORATORY, TOURO INFIRMARY.

By Dr. J. P. LOBENHOFFER, New Orleans.

The therapeutic results of the 606th combination in Ehrlich's series of organic arsenic compounds, named by him Salvarsan, have been so striking that it has become an almost indispensable factor in the armamentarium of the modern physician. Unfortunately, the European war has cut us entirely off from the source of supply of the original article, but several substitutes have lately been offered to take its place. Two of them are at present available in this country, one made in Philadelphia, known as Arsenobenzol, and the other made in Canada and marketed under the name of Diarsenol.

As the chemical composition of salvarsan has been well known from the time of its discovery, it should not prove a very difficult task to the chemist supplied with the necessary manufacturing facilities, which, by the way, are quite elaborate and expensive, to give us a product of the same chemical composition, and therefore with the same therapeutic properties. While owing to the short time elapsed since the introduction of the substitutes the writer is not in a position to express any opinion as to the therapeutic value, the manufacturers seem to have succeeded to make their products resemble salvarsan rather closely in appearance and physical and chemical properties.

Salvarsan, or arsenobenzol, or diarsenol, or, to give the child its full name, arsenic dihydroxydiaminodibenzol hydrochlorate is a bright yellow powder, more or less soluble in hot distilled water, with a strongly acid reaction. The average dose of six decigrams contains the equivalent of about four grains of arsenous acid $As_2 O_3$). This amount, which, of course, would prove very quickly fatal in its inorganic form, is quite easily borne in organic combination, and right here lies the principal source of danger in the administration of all organic arsenic medication. It must be so handled as to prevent by all means the reduction of organic to inorganic arsenic.

Extensive experience in the preparation of arsenobenzol for intravenous administration in the laboratory of Touro Infirmary, where several thousand injections have been prepared, has shown that a modification of the method first suggested by Weintraut,

of Wiesbaden, is by far the best and safest way. The principal difference of this method as compared with the one generally employed, consists in the use of a one-fifth normal solution of sodium hydroxide in place of the 15% one generally used. It is perhaps superfluous to state here that the generally accepted way of preparing arsenobenzol for intravenous use is to dissolve the substance in freshly distilled hot water, and then add 15% solution NaHO, drop by drop, until a clear solution is obtained. A comparison of the amount of NaHO contained in the two solutions shows that one drop of the 15% solution represents more NaHO than 1 c. c. of 1/5 nomal solution.

Soon after beginning to prepare salvarsan for intravenous use we found that over-alkaline solutions, that is, solutions in which more alkali was used than was necessary to just get a clear solution, were much less stable and much more apt to upset the patient than solutions which were correctly made, i. e., just mildly alkaline. And then arose the question, how to tell what was the right amount of alkali. A few drops and even one drop over of the 15% solution made a big difference in the reaction. This and other considerations led us to experiment with the Weintraut method, and then we found to our astonishment that considerably less alkali, as much as 33%, was needed to get a clear solution, when we used the 1/5 normal solution, suggesting the formation of a mono-sodium salt with the 1/5 normal solution, instead of the disodium salt formed when the 15% solution is used. The physical characteristics of the two solutions also bore this theory out, the former producing a much lighter solution, which remains unchanged for twenty-four hours, if excluded from the air, while the latter makes a darker solution, which shows signs of decomposing within two hours.

The use of a normal solution pointed, of course, also to a determination of the acidity of the powder used, and here we were again surprised to find a distinct variation in different batches, amounting at times to as high as 10%, although they came from the same source of supply. This led us to work out the following method, for the preparation of arsenobenzol for intravenous use, which we have since followed in a long series of cases with very satisfactory results:

Dissolve the average dose of 0.6 of arsenobenzol in 30 c. c. of hot freshly distilled water. Now take 1 c. c. of this solution,

which represents 1/30 of 600 milligrams or 20 milligrams, and add enough distilled water to measure 10 c. c. Add one or two drops of phenolphthalein test solution and then enough 1/10 normal solution of sodium hydroxide to get a permanent pink color. The amount of 1/10 normal NaHO shows the acidity of the 20 milligrams of arsenobenzol. Multiplying this with 29 gives the quantity of 1/10 normal NaHO to neutralize the remaining 580 milligrams. To get the amount of 1/5 normal needed we divide this by 2, of course. To make the solution mildly alkaline, we add 2 more c. c. of the 1/5 normal solution than is necessary to neutralize, and this gives us the total quantity of 1/5 normal NaHO needed.

To illustrate: We find on testing with phenolphthalein that 1 c. c. containing the 20 milligrams of the drug requires 1.1 c. c. of 1/10 normal NaHO to neutralize it. On multiplying this with 29 we get 1.1x29=31.9, or practically 32 c. c., of 1/10 normal NaHO to neutralize the remaining 580 milligrams. Dividing this by 2 we get 1/2 of 32 or 16 c. c. of 1/5 normal NaHO, with 2 c. c. to make the solution alkaline, or a total of 18 c. c. This quantity is added at once to the acid solution, when on shaking up a clear light golden yellow solution results.

In other respects we follow the original method recommended by Ehrlich; that is, we put about 100 c. c. of warm sterile normal saline solution in a sterile glass stoppered cylinder of about 200 c. c. capacity, and strain the acid solution into this through sterile cotton, washing funnel and cotton with freshly distilled sterile water until no more color remains. Next the previously determined amount of 1/5 normal NaHO, which must be also sterile, of course, is added, the cylinder well shaken and enough sterile water is added to make the whole measure about 200 c. c.

This method ought to appeal to the medical profession in that it is much more accurate and definite than the rather crude way of adding a strong solution of sodium hydroxide until a clear liquid is effected. Any pharmacy with a fairly well-appointed prescription department can supply a correctly titrated normal solution of sodium hydroxide within half an hour. It is a very easy matter to dilute this to 1/10 and 1/5 normal. To avoid any change in strength by evaporation, it is best to sterilize them in an autoclave. The apparatus needed for this method is quite simple and inexpensive, consisting of a few graduated cylinders,

a small burette and a few beakers, and can be purchased for less than five dollars. Expert chemical knowledge is not needed to carry out this simple procedure, and it requires very little more time than the usual method. It seems to us that in dealing with a substance, the average dose of which contains enough arsenous acid to prove fatal to several men, any additional safeguard ought to be welcomed.

In conclusion, we would like to state that with solutions prepared in the above described manner, reaction is very rarely seen, provided the patient has been properly prepared by purgation and fasting. When it does occur, it is generally seen in secondary cases, where the sudden destruction of large numbers of spirochetæ in the general circulation sets free endotoxins which give rise to the clinical picture of chills, fever, headache, some nausea, etc., often called arsenobenzol reaction, but only indirectly caused by this drug. The direct symptoms of arsenical poisoning are gastro-intestinal irritation, renal inactivity, prostration and shock.

THE GENERAL STATUS OF IMMUNITY FROM A LABORATORY AND CLINICAL STANDPOINT.*

By ALEXANDER M. ROVIN, Ph. D., Detroit, Michigan.

History of medicine records the rise and struggle of one school after another, each vigorously contending for the truth of its particular theory, while denouncing and denying that of others Notwithstanding this, each school has contributed some nugget of truth which has helped to build up our modern science of medicine.

From these early times, medical practice has become more and more rational and definite and theories have given place to practical results worked out and checked up by clinical and laboratory tests.

As a result of this evolution of scientific research extending over many years, we have the new development known as Bacterin Therapy.

Unlike so many of its predecessors, this therapy is not the result of theories and polemics, but the outcome of well-ordered and developed facts worked out through experimental and clin-

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ical data. It comes to us free from the haziness and indefiniteness of unstable theories, without taint of prejudice or fierce dogmatism.

Founded upon animal experiments, checked up by delicate chemical and physiological tests, it makes no demand upon credulity, but offers data based on facts. It controverts no theory of any school, but harmonizes with the truth discovered by all.

The old school finds it acceptable—for how can it deny its own offspring? It meets the demand that, in therapeutics, the essential thing is the removal of the cause and the cure of disease by creating in the patient ferments which neutralize and destroy bacterial ferments producing the disease. This is what is termed immunity.

Immunity may be natural or acquired. Natural immunity may be explained on the theory that the nonspecific proteolytic ferments contained in the blood serum of one species will digest and destroy germs that may be able to live and cause disease in some other species. Acquired immunity may be active or passive. An active immunity may be obtained by the tissue cells becoming sensitized for the production of specific proteolytic ferments as a result of an infection or from germ inoculations. A passive immunity may be brought about by injecting or supplying immune serum obtained from some immunized animal, as is being so successfully done in the treatment of diphtheria or tetanus with antidiphtheritic and antitetanic serum. In this instance, the animal from which the serum was obtained produced the antibody; whereas in an active immunity the tissue cells of the person becoming immunized produce the antibody.

That germs are the cause of disease has been conclusively demonstrated by animal experimentation The use of animals for this purpose is of distinct advantage because no factor of a psychic nature enters into the process, and, by killing various animals at certain intervals the different stages of the diseased process may be carefully studied. To prove that a given germ causes a disease, it is necessary to always find that germ in that disease; grow it in pure culture, on artificial media, such as gelatin, and when inoculated into a susceptible animal produce the same disease and again find the germ in the inoculated animal and grow it in pure culture.

Germs grow and multiply by absorbing, digesting, and assimilating food substances with which they come in contact. When such food substances are not suitable for absorption, germs often secrete a ferment from their surface which will dissolve the food with which they come in contact to prepare it for absorption. They also secrete ferments within the germ cell which serve the purpose of building the food substance into the cell structure.

It has been known for a long time that, in many diseases, recovery from one attack renders the individual immune to subsequent attacks. With animal inoculations it is also found that when an animal recovers from a live germ inoculation, subsequent inoculations of the same germ will, as a rule, not cause an infection. Furthermore, inoculations of killed germs in proper sized doses at certain intervals for a brief period of time will also render the animal immune to live germ inoculations of the same kind.

Fresh normal blood when placed in an incubator will destroy a limited amount of a great variety of germs. If a greater amount of germs is added than the blood can destroy it is found that the number of germs is greatly diminished during the first few hours of incubation, and after that the remaining live germs will begin to multiply and grow freely in the blood. Blood from an animal that has been previously immunized will also destroy a limited amount of a great variety of germs, but will destroy a much greater number of the kind of germs to which the animal has been immunized. These experiments show that normal blood contains a limited amount of substance that has a destructive influence on germs which is consumed during this germ-destroying process, after which remaining germs may grow freely, and that this germ-destroying property of the blood is enormously increased to the particular germ to which the animal has been immunized. Some of these immunizing substances have been definitely determined and are known as lysins, agglutinins, precipitins, opsonins, etc., from the particular way they influence the germ, and by clever means, ways for determining the amount of these immunizing substances present in the blood have been devised.

All this clearly points out that recovery from infectious diseases is due to the development of immunizing substances or antibodies, as they are frequently called, by the defensive

mechanism of tissue cells in their efforts in overcoming an infection.

Vaughan, Friedberger, Abderhalden and others, through extensive animal experimentation, point out that these germ-destroying substances which are developed during the immunizing process are ferments which are evolved by the tissue cells as a result of the germ invasion From this conception the various immunizing substances known as agglutinins, precipitins, opsonins, lysins, etc., would be regarded as different forms of ferments. So, when an infection takes place, living single cell microorganisms gain possession, live, grow and multiply in the fluids, or tissues of the body. To live and grow these germs must utilize substances from the living body as food. Where such substances are not suitable for absorption and assimilation, the germ secretes extra-cellular or intra-cellular ferments to prepare or digest these substances so that the germ may continue to live. Tissue cells, on the other hand, in their defenses of overcoming the invading microorganism, also possess the power of evolving ferments which in this instance have a destructive or digestive influence on the germs present in the tissues. From this it is seen that the battle between the invading microorganisms and the tissues of the body is one in which the life activities of the germs through their capacity to feed on and digest living substances is met by the capacity of the tissue cells in producing ferments that have a destructive or digestive influence on the germs. Where tissue cells have been trained to develop these ferments, where they have in a measure acquired this capacity to produce the special ferment necessary to destroy a particular kind of germ, the battle becomes a comparatively easy one. Such an individual is said to be immune to the germ; his tissue cells have become sensitized to this variety of germs. If the tissue cells have had no training in fighting a certain kind of germ and the invading microorganism happens to be virulent, the chances are that the germ will gain the upper hand and destroy life.

From this it should be clear that the main factor in preventing germ invasions or the development of infectious diseases, consists in having our tissue cells efficiently trained in destroying or digesting disease germs with which we are liable to come in contact. That virulent live germs causing infectious diseases are not suitable agents to adequately train tissue cells in this defensive

ferment production is demonstrated by the fact that they often cause prolonged illness or destroy life. Recovery from a severe infection does not develop a greater degree, or a more intense immunity, than what takes place by overcoming a less virulent germ of the same variety. This shows that adequate immunization does not depend on the virulence of the microorganism which was overcome. Recovery from infections by some microorganisms does not necessarily establish a permanent immunity; the immunity that was established during the course of the disease wearing off in course of time, when the individual may again be subject to the same infection.

An infection constitutes a condition in which a living bacterial protein is maintaining itself in the tissues of the animal body In an actve infection, tissue sensitization for the production of specific proteolytic ferments, which have a destructive influence on the invading organisms, is evidently not taking place adequately, and this must be due to some inherent power possessed by the living bacterium, which hinders tissue cells in antibody production. To destroy these germs, antibodies must be produced. Those who are theoretically opposed to vaccin therapy contend that the live organism in the infected area is the best suited antigen to stimulate tissue cells towards antibody production, that if living organisms will not irritate or agitate tissue cells towards developing a protest with antibody production, why should killed organism injections hasten immunization? It seems never to have occurred to opponents of vaccin therapy that live organisms may irritate tissue cells to a point where their immunizing response is crippled or retarded, instead of being stimulated. That the live organism in its effort to grow and multiply has such a devitalizing influence, is evident from the fact that its destruction is usually a prolonged process and in many instances gains supremacy and destroys life.

It has been found that in immunizing animals a more intense degree of immunity can be developed if live virulent organisms are injected after a fair degree of immunity has been established from killed organism inoculations. This has led some to believe that this same high degree of immunity will develop from live organisms in a virulent infection. This does not necessarily follow, because the animal that has been previously immunized with killed organisms has enough antibody in its blood to cripple the

activities of the virulent live organism, subsequently injected, to sufficiently prevent its gaining possession, and consequently does not hold the same relation to living tissues that the organism in an active infection does.

Recently it has been found that tissue cells can be efficiently trained for specific ferment production to digest certain kinds of germs by repeated inoculations of killed germs. This is a distinct step in advance to the art of artificial immunization. By killing the germs all dangers of causing an infection are avoided, and by gauging the dose and properly spacing the intervals between inoculations it is possible to have the case under control. When killed germs are injected under the skin, tissue cells with which they come in contact deal with them as intruders and, having the biochemical composition of invading germs, they are dealt with in the same way as if a focus of infection had developed. Tissue cells become sensitized for the purpose of producing specific ferments to destroy, digest the killed germs that have been injected. The germs being killed, they can offer no resistance to destruction; can secrete no ferments that have a devitalizing influence on the tissue cells with which they come in contact, consequently, the entire cell energy can be devoted to specific ferment production for germ destruction. When the cells have become sensitized for specific ferment production, as a means of protection, they continue to produce ferments for some time and by repeating inoculations at proper intervals a high state of immunity can be developed. This is the method of immunization that is being so successfully employed in preventing typhoid fever in the various armies in the world as well as in civil communities where typhoid fever has put in an appearance. Three doses of killed typhoid bacilli or typhoid vaccin, or bacterin, as it is preferably called, given at ten-day intervals, is sufficient to protect a person from contracting the disease The treatment is perfectly harmless and causes but little disturbance. The same method of immunization is also being successfully employed in preventing whooping cough, scarlet fever, cerebrospinal meningitis, typhus, bubonic plague, cholera, colds, pneumonia, and other diseases. All this clearly shows that bacterin injections offer an efficient means of training, teaching, or developing tissue cells as specific ferment producers, so as to make it possible to resist invasions of live virulent organisms of the same

kind that were present in the bacterin that was employed for immunizing purposes; in other words, tissue cells can be more readily trained as germ destroyers by having them operate on killed germs, than when they are brought unprepared under the devitalizing influence of virulent live germs. Virulent live germs retard or inhibit immunization by their devitalizing influence on tissue cell activities, while killed organisms or bacterins stimulate the immunizing mechanism for antibody production.

The amount of killed germs that it is necessary to inoculate to activate tissue cells for specific ferment or antibody production is surprisingly small. The dead germs contained in an average dose of a bacterin would weigh less than four ten-thousandths (0.0004) part of a grain—an amount so small that no poisonous effect could possibly follow its injection. From the fact that such small doses are employed it may be inferred that the biochemical composition of the germ substance is very toxic in character. Animal inoculations show that this is not the case. Repeated inoculations of guinea pigs with doses of killed germs of what would be equal to five to ten thousand times the dose usually given to man showed no ill effect on the animals. A bacterial vaccin or a killed germ inoculation produces in no sense a drug action. Killed germ inoculations simply arouse a protest on the part of the tissue cells expressed in specific ferment production, and experience shows that a very small amount of killed germs is necessary for this purpose.

From what has been said it should not be inferred that immunization can accomplish everything. Where abscesses develop they should be opened; where deformities exist they, where possible, should be corrected. In short bacterins do not displace other useful measures of any kind, whether of a surgical nature, or the use of antiseptics or drugs; but where an infection exists, bacterins may be used alone or in conjunction with other measures to an enormous advantage to the patient

Most diseases are due to infectious organisms gaining entrance and maintaining themselves in the tissues or fluids of the living body.

To overcome an infection, the defensive forces of the body must be trained or developed in antibody production for the destruction of the invading germs and thus establish an immunity.

Live virulent germs retard immunization and on account of

their destructive influence on tissue cells often inhibit immunization and destroy life.

Killed germs when injected into healthy tissue rapidly stimulate the defensive mechanism, train and develop tissue cells for antibody production and by this means prevent and cure disease.

The reason bacterins are not more generally employed is because the principle that killed organisms are better agents to train tissue cells for antibody production than the live organisms present in the infected area is not sufficiently realized nor, as yet, thoroughly understood by the general practitioner. Many indefinite conceptions prevail which obscure the causative relation between the infecting germ invasion and the activities of the tissue cells in their effort to destroy the germs causing the disease and thus restore health. It is only by studying its practical application, the means of testing its accuracy, that theoretic knowledge is made useful. That vaccin therapy is in accord with the theoretic knowledge of prophylaxis and immunization can no longer be disputed, for its therapeutic value is established by tangible clinical observation and laboratory data.

A WORD ABOUT PITUITRIN.*

By H. R. COGBURN, M. D., Bayou La Batre, Ala.

The purpose of presenting this paper for your consideration and discussion is to give, if possible, a clear, concise and unbiased opinion of pituitrin or pituitary extract and its proper application in the management of obstetrical cases based entirely on my limited personal experiences covering a period of about twenty months.

Pituitrin is an extract of the posterior or infundibular portion of the pituitary gland. This gland has heretofore been an enigma to the anatomist. Of course, there have been various theories advanced from time to time concerning its physiological existence. Suffice here to say it is located at the base of the brain and consists of two lobes, a large anterior and a small posterior lobe or infundibular portion. From a physiological standpoint the pituitary gland is largely speculative But there seems to be beyond all doubt a substance or substances contained in the gland

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*Read before Washington County, Alabama, Medical Society, April 6, 1916.

that exert considerable influence over the metabolism and on the cardio-vascular system. The physiological action of the two lobes is quite different. It is claimed that animals survive the removal of the posterior lobe, while, on the other hand, death occurs from the removal of the anterior.

It has been found that pituitrin increases blood pressure and diminishes pulse rate, this depending entirely upon the dose given and to the susceptibility of the patient.

Pituitrin acts very similarly to adrenalin on the blood vessels, except that the former elevates the blood pressure for a much longer period of time. It is contra-indicated in cases already exhibiting an increase of blood pressure. Especially is this true in nephritis and the cardiac complications of goiter.

The results of pituitrin when administered with discretion is almost to a degree marvelous, but to produce these results it must be employed at the correct time and under proper conditions. To administer pituitrin at the onset of labor is not only useless so far as hastening the expulsion of the fetus, but is actually a dangerous procedure. It is also contra-indicated in the following conditions: contracted pelvis, tumors or any obstruction in the natural passage through the soft parts. It should not be given where there is a contracted rigid os, transverse or other abnormal presentations.

Although pituitrin is said to be contra-indicated in nephritis, I have employed it more than once in nephritic subjects, in which case I felt justified in taking the risk, and in each instance satisfactory results were obtained.

I never give pituitrin until the cervix is almost, or completely, dilated. If the second stage of labor has not really begun, I first ascertain whether or not the cervix is soft and dilatable. When the pains in the second stage of labor grow weak, the fetus at a standstill and the mother exhausted after a long, hard first stage, the passage clear, I feel free to use pituitrin The pains will be greatly and rapidly increased, even the mother notes the progress. From this stage of labor I use it with discretion until the head is born.

Pituitrin should not come in contact with alcohol, as it renders it inert. If you sterilize your hypodermic syringe and needle with alcohol, you should always use sterile water afterwards. The syringe and needle should be free from all traces of alcohol.

Boiling is the best plan to sterilize the syringe and needle. I administer, as an initial dose of pituitrin, 1 c. c., just as soon as the os is well dilated; if satisfactory results are not obtained, I repeat it in from one half to one hour.

Pituitrin does not induce labor pains. Its function should be to assist and strengthen natural pains or to induce pains after inertia. We read of men who have administered pituitrin, it being clearly indicated, yet they received no results. Do not condemn this product because you fail to procure results in 100% of your cases. There is no specific known to medical science commanding such a brilliant record. I am sure when administered judiciously pituitrin will produce the desired results in a great majority of cases I have terminated labors which without its use would have unquestionably necessitated the application of forceps, which would be frequently obviated if pituitrin was employed. DeLee says that a conservative estimate would place the number of deaths occurring annually from the direct and indirect consequences of labor at 20,000.

Lacerations, malpositions, congestive conditions of the genital organs all produce postpartum results that add to the discomfort, unhappiness and distress of a large number of women who have undergone maternity. Any therapeutic agent which will serve to lessen the mortality or the debilitating effects of child birth should be welcomed to the obstetrician. Think of the numerous and serious conditions often produced by the application of instruments, both to the mother and child, and note how these conditions can be obviated, or at least very much lessened by the conservative use of pituitrin.

As an ecbolic this agent has a place in normal labor. By normal labor I do not mean those rapid cases where there are always natural pains and a quick delivery, but those slow, long-drawn-out cases which are considered normal with some women. I do not wish to make the impression that I would endeavor to deliver a woman with undue haste, not allowing sufficient time for the soft parts to prepare themselves for the passage of the fetus. On the contrary, I would much prefer the long labors rather than attend a precipitated one in which there is so much danger of lacerations. Yet there are cases that require hours of waiting, where the pains are good but the intervals between the pains are long. The patient is worn out and disgusted, but after much

delay the child is finally born. In such cases the administration of pituitrin would greatly shorten the suffering and anxiety of the patient, to say nothing of the probable benefit to the child.

In presenting the following cases, will state that I did not select them especially for this report, but merely chose them at random.

Case 1.—Patient white. Second child, first child delivered with forceps, placenta delivered with placental forceps, severe hemorrhage. Patient had 2 or 3 sharp pains about 8 a. m. followed by dull aching for about one hour, after which all pains ceased. Patient walked about house all day. Had slight backache same evening. I was called again about 10 o'clock p. m. On vaginal examination found cervix almost completely dilated. No pains. Gave various medicines to induce same, also manipulated cervix with my hand. All efforts failed. Patient ceased having pains that night and next day. In the meantime I wired for some pituitrin. It arrived about night and I read the instructions and decided to give it a trial. When I next examined the patient I found the cervix unchanged. Head presenting, roomy pelvis. Gave 1 cc. pituitrin hypodermically. In about 15 minutes violent pains were started and continued as in ordinary labor; progress was satisfactory and as head pressed against the perineum I gave a few whiffs of chloroform. Child was born in a little more than an hour after the pituitrin was given; placenta was easily delivered, flow normal. No after pains, splendid contraction of uterus. Mother and child progressed nicely.

Case 2.—Negro woman. Age 25, fourth labor. Labor began about 10 p. m. Midwife was called and effected delivery about 3 a. m. It was discovered that uterus was still very large and proved to be twin pregnancy. Pains ceased, flow moderate. I reached patient at 8 a. m., found cervix very much dilated, no pains. Tips of fingers of right hand protruding from vulva. After some difficulty hand was reduced. Head was soon felt presenting. Gave 1 cc. pituitrin; in one and one-half hour second child was born, placenta delivered, uterus contracted. Mother and children in good condition.

Case 3.—White woman. Age 31, first labor. Was called to patient after she had been in labor for about 12 hours in charge of midwife. On examination I found the os rigid and contracted and the fetus dead. Gave large doses of chloral hydrate, after which the os softened. Pains were still regular and fairly strong. Dilated cervix with my fingers. Head presented, pelvis large. Progress very slow. Gave 1 cc. pituitrin. Pains increased in strength and frequency in 5 minutes. In one hour head was pressing slightly against perineum, pains getting weak again and woman worn out. I then gave the second cc. of pituitrin. Pains increased in strength,

in 30 minutes a large badly decomposed fetus was expelled. The pulse increased in frequency for about one hour after delivery. Patient made a rapid recovery without complications.

Case 4.—White woman, age 23, first labor. Patient attended for about 20 hours by midwife before I was called. On examination I found the cervix fairly well dilated. Head presenting. Strong pains growing weaker, and at longer intervals. Patient very much exhausted. Pelvis slightly contracted and a large head made a forceps operation undesirable. Gave patient chloral and a small amount of chloroform by inhalation. Rest and sleep followed for 3 hours after which patient awoke very much refreshed. Pains returned but were rather weak, by manipulating the cervix pains were made stronger, progress slow—gave 1 cc. pituitrin, pains strengthened and progress better. After one hour I have the second cc. of pituitrin, cervix now completely dilated, pains good, but progress slow. Patient was again becoming very much exhausted. Thirty minutes after the second dose I gave the third dose of pituitrin. The child was born in 20 minutes in good condition. Patient experienced no laceration, the placenta was slightly attached but was finally delivered by Crede's method. No hemorrhage, good contraction. Mother's pulse was very rapid for several hours after delivery. Mother made a normal recovery.

Various conclusions have been reached regarding the therapeutic value and technic employed in the administration of pituirin. By referring to current literature on this subject it will be noted that various results have been effected. One physician writes: "I have received very gratifying results from pituitrin prescribed in pregnancy for the purpose of expressing flatus and fecal matter from the intestines. Pituitrin has proven to be of great value for its diuretic effect and for elevating the blood pressure." Personally I have employed this product to increase uterine contractions only. I have received satisfactory and gratifying results in each and every case where given.

Nothing, with the exception of chloroform and antisepsis, has been discovered for obstetric practice that has proved to be so great and useful as pituitrin, since the invention of forceps.

In conclusion, allow me to state that in my opinion in conservative hands this is a safe and valuable remedy in obstetric practice.

TWO CASES OF BONE GRAFTS.*

By JAS. T. NIX, JR., B. Sc., M. D., New Orleans, La.

Under the heading of Bone Grafts, I have had two cases which might be of interest.

Case No. 1: George Schrimpf, 21 years old, of Bogalusa, La. Family history and previous history unimportant. Present illness, April 4, 1915, patient in alighting from freight engine, slipped on a piece of coal, which threw him against boiler in rear of engine. As he stumbled, the siphon pipe struck him in the spine of back at level of lower border of scapula. Patient was immediately rendered unconscious and was taken to the Bogalusa hospital. On regaining consciousness he noticed a painful enlargement over vertebral column at spine of ninth dorsal, and from this point down to extremities there was decreased sensation and greatly impaired motion. Radiating, lancinating pains over lower thorax and upper abdomen were always present, intensified by the erect or reclining position and making decubitus imperative for comfort.

He was first seen by me on May 11, 1915, at which time all of the above conditions were present in exaggerated form.

Diagnosis: Radiograph showed a compression fracture of body of ninth dorsal vertebra; physical signs and clinical symptoms elicited compression of the cord.

Treatment: A graft six inches long was taken from anterior border of right tibia and firmly sutured in a gutter formed by splitting longitudinally the spines and connecting ligaments of the seventh, eighth, ninth, ten and eleventh dorsal vertebræ Patient supported with plaster jacket for eight weeks.

Result: At the end of three months patient had entirely recovered and resumed work without inconvenience.

Case No. 2: Mrs. B. D., Charity Hospital, 35 years old.

Present illness: During the past year patient has suffered incessantly with dull lumbar pains, which, despite medical treatment have progressively grown worse. Numerous lupoid eruptions were on face and body of patient.

Diagnosis: Skiagraph and clinical measures showed tubercular spondylitis of first and second lumbar vertebræ.

Treatment: Bone graft from tibia to vertebral column, including spinous processes of the eleventh and twelfth dorsal, first, second, third, and fourtth lumbar vertebræ.

Result: At the present time firm anchylosis has replaced the disease and a cure has, in this wise, been effected.

Case No. 1 was operated on at Hotel Dieu, May 14, 1915.

Case No. 2 was operated on at the Charity Hospital, September 16, 1915.

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*Read before the Orleans Parish Medical Society, October 26, 1915. [Received for Publication, April 12, 1916.—Eds.]

N. O. Medical and Surgical Journal

Editorial Department.

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REGULATION OF CHIROPODY.

The Louisiana State Chiropodists' Association proposes to seek legislation at the coming State Legislature aimed at regulating the practise of this calling in the State of Louisiana. Such legislation has obtained in other states, and it has deserved consideration because the chiropodists have made no pretense to any other practise than that covered by their title and, moreover, as in other states, the regulation is to be by examination and licensure, placed under the administration of the regular State Board of Medical Examiners. The proposed bill contemplates the definition of the practise of chiropody, the registration of persons at present engaged in such practise, the examination of future prac-

titioners, the determination of the scope of the examination, the penalties attached to irregulars, and the cancellation of registration for cause, the particular occasions for which are set forth in the bill.

There should be no objection to such a bill on the part of medical men, if the chiropodists want such protection of their organized practise. The usefulness of the chiropodist and the necessity for such a particular occupation may be debatable, for the treatment of the conditions falling within the field of the chiropodist is in itself worthy of more consideration than is usually given. So long as the physician continues to exclude such minor ailments from his dignified practise, the public will continue to demand the convenient skill of the chiropodist for the amelioration of the social evils of the feet, and it is highly commendable that the body of such operators should desire to dignify their work by a reasonable legislative act.

NEW JOURNALS.

More than casual interest attaches to the appearance of the *Journal of Cancer Research* and of the *Journal of Immunology*, two publications emanating in joint issue from the presses of Williams & Wilkins Co., in Baltimore, and the Cambridge University Press, in London.

Each journal has a distinguished list of collaborators, most of whom rank high in scientific medicine.

The *Journal of Cancer Research* is certain to make its field of value to all medical men, for the interest in cancer from every point of view is general and the lack of exact knowledge will create a desire for current information relating to this problem. The initial number argues that this journal will meet this demand, for it contains articles of research in the laboratory, statistical investigations, and detailed reports of the Proceedings of the American Association for Cancer Research. The format of the publication is exceptionally academic, offered really as a group of essays, with perfect letter press and excellent illustrations. The absence of any extraneous departments is noteworthy.

This publication is to appear quarterly and the editorial direction will be in charge of Dr. Richard Weil, of New York.

No less attractive is the first number of the *Journal of Immun-*

ology, under the editorial charge of Dr. Arthur F. Cola, of New York, and appearing as the official organ of the Society of Serology and Hematology and of the American Association of Immunologists.

This publication is issued as a companion to the cancer journal and with the same method of editing, the material naturally covering its specific field. Anaphylaxis, complement fixation in varicella and variola, etc., are types of subjects discussed—all with the characteristics determining their suitability for the character of journal here noticed.

The American Society of Bacteriologists has also announced the publication of its *Journal of Bacteriology* with the purpose of presenting the broad aspects of the subject as it may relate to medical problems, but as well in its association with general economic and educational questions.

So, with these additions to the periodicals devoted to scientific medicine, we should be richer in our educational opportunities and every measure of success should accrue to the promoters of these enterprises, requiring, at this time, considerable courage in the undertaking. The multiplication of journals is not at all desirable, but when new publications can find fields of special usefulness, they should meet with the fullest encouragement.

ANESTHETICS AND TRAINED NURSES.

The communication we published last month on the above subject, accompanied by an opinion from the attorney of the Board of Medical Examiners, evidently has had the effect desired by the Secretary of the Board. The intention was to attract the attention of the profession to an important point in order to prevent an unintentional violation of the law and to bring about an amendment of the law if deemed best.

We understand that the Board also has received a number of communications on the question and, in order to bring out the points at issue, we print first a letter from Dr. Bethea, and a second letter from the Board's attorney sent to another physician making similar inquiries, which can serve as an answer to all.

New Orleans, April 4, 1916.

Drs. Chassaignac and Dyer,
Editors New Orleans Medical and Surgical Journal.

Gentlemen: In your issue of April, 1916, page 670, under the head of "Communication" you have a letter from Dr. Leckert, also

one from his counsel, Mr. Florance. Your publication gave this matter wide circulation and while I do not approve of nurses administering anesthetics I believe that all parties concerned are due a further investigation and presentation of facts.

If the legal proposition hinges on the phrase "Applying of a Drug for the Relief of Bodily Pain," then what would be the difference in giving ether by inhalation for anesthesia, ether by mouth for abdominal pain, morphine by hypodermic, or applying a mustard poultice for bronchitis?

It would seem that there would have to be some further legal specification in order to call it a misdemeanor for a nurse to administer an anesthetic duly prescribed by an authorized authority, else we would have to conclude that every dose of a prescription for the relief of pain would have to be personally administered by the physician.

Hoping for further information, I am

Yours very truly,

O. W. BETHEA, M. D.

New Orleans, April 4, 1916.

My dear Doctor:

I acknowledge receipt of your letter in regard to the opinion given by me to the Secretary of the State Board of Medical Examiners as to whether the administration of an anesthetic comes within the definition of the practice of medicine under the Medical Examiners' Law of this State.

You ask me to let you know why this law has never prevented the doing of certain things detailed by you. My answer is, "I do not know." My duty as counsel of the Board is limited to giving to the Board my opinion on concrete questions of law submitted to me. I have nothing to do with the policy of the Board, and still less is it my duty to suggest to the Board the manner in which, or the extent to which, the law should be enforced. Had the questions detailed by you been submitted to me, my answer would have been exactly the same as given in the opinion referred to by you.

The Medical Law of this State, before it was enacted, was passed upon by the Committee of the State Medical Society in charge of legislation affecting the practice of medicine in Louisiana. While it is very possible that the question at issue did not present tself to that Committee, nevertheless, that Committee approved the exceedingly inclusive definition of medicine that the statute contains.

You will appreciate the fact that as the law stands, it would be impossible for me to differentiate a service of the kind mentioned by you done under the supervision of a physician, from one done without the supervision of a physician; this, for the reason that no such difference is provided for in the statute. Still less does the statute define what constitutes supervision; whether it is limited to the personal presence of the physician, or whether it includes also instructions to be carried out in the absence of physicians.

You must also remember that there is nothing in the statute referring to Trained Nurses; the law creating the status of "Registered Nurse" merely gives a title which can be used only by those coming within the provisions of that law. The "Registered Nurse Statute" gives no greater privileges to registered nurses over unregistered nurses, beyond the use of the title, or its abbreviation, R. N.

You will se therefore that if my interpretation is not correct, there is nothing to prevent any physician from authorizing any untrained person to administer out of the presence of the physician and under circumstances where the condition of a patient may have changed, an anesthetic, a hypodermic injection, or the giving of any other drug. If the medical profession desires to have inexperienced persons use such drugs under the instructions but in the absence of physicians, it should be so definitely stated and legislation can be had to that end.

If the profession desires to limit the administering of such drugs to "Trained Nurses," the legislation should be explicit to that end.

You will realize that when a law is passed, it cannot be held to apply only to disreputable people who violate it; like the rain "it falls on good and bad alike."

I have yet to receive any suggestion as to how, within the limits of the law, the administering of these drugs by others than physicians should be permitted.

Either the law allows any person under the instructions of a physician, present or absent, to administer drugs, or it does not. Where the law makes no distinction between classes of persons (other than physicians), I cannot advise that such classes should be created by the Board of Medical Examiners.

If I were to have any opinion on the subject that opinion would be, that a provision permitting the administering of an anesthetic, or other drug, in the presence and under the personal supervision of a physician, should be enacted as a part of the Registered Nurses' Law of the State, provided trained nurses are specially trained to render such service and are examined as to their competency.

As to whether any person other than a trained nurse should be permitted to administer drugs is another question, which the State Medical Society is much more competent to answer than I am.

I may state that the Legislature of Louisiana will meet next month and that I have received no instructions from the Board of Medical Examiners looking to an immediate and stringent enforcement of the law in regard to the matters inquired of.

This will give ample time to at least the Parish Medical Society, if not to the State Medical Society, to express its opinion as to how far, and in what cases, and by what class of persons, other than physicians, the administering of drugs should be permitted. This being determined definitely, I would advise that an amendment be sought to the Registered Nurse Statute, or that an independent

statute be sought to be enacted covering the recommendations of the provision.

Accept my assurance that it will give me pleasure to assist in obtaining legislation recommended by the medical profession.

With personal regards, believe me

Yours very truly,

(Signed) ERNEST T. FLORANCE,

Attorney Louisiana State Board of Medical Examiners.

Mr. Florance's suggestion that the local society, and especially the State Society, give the matter its attention is an excellent one.

We would deprecate any attempt to tinker with the "practice of medicine" act. If any change in legislation be deemed necessary in order to legalize the administration of anesthetics by nurses, which seems to be quite a growing practice and one which is quite prevalent in other centers, it should be done in connection with the "Registered Nurse," act as advised by Mr. Florance, and only after mature deliberation, including that of proper restrictions.

Society Proceedings

MINUTES OF FIRST SEMI-ANNUAL MEETING OF FOURTH DISTRICT MEDICAL SOCIETY OF FOURTH CONGRESSIONAL DISTRICT OF LOUISIANA.

The first regular semi-annual meeting of Fourth District Medical Society was called to order at the Hotel Youree, Shreveport, at 2 p. m., March 23, 1916, by President C. H. Irion; Secretary A. A. Herold at his desk.

The invocation was delivered by Rev. W. F. O'Kelly, of Shreveport. This was followed by addresses of welcome on behalf of the city of Shreveport by Dr. S. A. Dickson, Mayor, and on behalf of the local medical fraternity by Dr. R. M. Penick, president of Shreveport Medical Society. In words of appreciation these welcomes were responded to by President Irion.

The minutes of the organization meeting of February 15 were read and adopted.

The scientific program being then in order, Dr. C. C. Allums, of Ringgold, read a paper on "Diagnosis and Treatment

of Empyema;" discussed by Drs. Willis, Crain, Penick, Sanderson, Bodenheimer, Ragan, Picard, Abramson and by the essayist, in closing.

Dr. H. J. Parsons, of Mansfield, read a paper on "Surgical Vomiting, With Report of Four Cases of Intestinal Obstruction;" discussed by Drs. Callaway, Knighton, Crain and by the essayist, in closing.

Dr. A. P. Crain, of Shreveport, read a paper on "The Problem of Peritonitis;" discussed by Drs. Hunt, Willis, Callaway, Sanderson, Furman, Ragan, Nelson, Knighton and by the essayist, in closing.

Dr. C. E. Edgerton, on "Malarial Hematuria and Hemaglobinuria," came next; discussion of this paper participated in by Drs. Tucker, Scales, Parsons, Hendrick, Silbernagel, Sanderson, Crow, Herold, Hunter, Hamner, Irion and Edgerton.

Dr. E. J. Frater, of Shreveport, then read his article on "Electrical Treatment of Neuritis;" discussed by Drs. Barrow, Knighton and Frater, in closing.

The secretary then made report as to evening session and banquet and also told of work of the council; he also gave a financial report, showing $62 dues paid to date, with total expenses amounting to $24.77. He then suggested that Dr. Dowling be permitted to address the meeting.

Upon invitation of President Irion, Dr. Dowling then took the floor and made a talk on patent medicines, misleading advertisements and vital statistics, which was listened to attentively and duly appreciated.

Meeting then adjourned till 7:30 p. m.

At 7:50 the evening session began with Dr. A. B. Moise's paper on "Osteoma of Frontal Sinus;" discussed by Dr. J. L. Scales.

Dr. S. Y. Alexander read a paper by himself and Dr. Rougon on "Pyelitis;" discussed by Drs. Huckaby, Picard, Walke, Sutherlin and Alexander, in closing.

Dr. C. P. Munday read a paper on "Dietetic Management of Acute Digestive Disturbances in Children;" discussed by Drs. Picard, Knighton and Crain.

It was then unanimously decided that next semi-annual

meeting be held in Shreveport, the exact time to be left to the Council.

The meeting then adjourned to the dining room, where a banquet was tendered by Shreveport Medical Society.

(Signed) A. A. Herold, *Secretary*.

Medical News Items

Society Proceedings.—The East Feliciana Parish Medical Society met on April 5, 1916, and had as its guest Dr. John Smyth, of New Orleans, who read an interesting paper on "Appendicitis." A discussion on clinical cases followed. A dinner at the List Hotel closed the meeting.

Alienists and Neurologists to Meet.—The fifth annual meeting of the Alienists and Neurologists of the United States will meet, under the auspices of the Chicago Medical Society, June 19-24, at the La Salle Hotel. For further information, address Dr. W. T. Mefford, Secretary of Conference, 2159 Madison Street, Chicago, Ill.

South Texas Medical Society Meeting.—At the 39th semi-annual meeting of the South Texas Medical Society, New Orleans and Tulane University were well represented on the program, Drs. S. M. D. Clark, Carroll W. Allen, E. Denegre Martin, J. T. Halsey, Allan C. Eustis and Isadore Dyer, contributing papers or addresses. Dr. J. Goldberger, of the Public Health Service, expounded his pellagra diet theory in extenso. The rank and file of the South Texas practitioners were not yet persuaded that diet is the sole factor in the cause, prevention and cure of pellagra, as Dr. Goldberger so enthusiastically believes.

The meeting was well attended, under the presidency of Dr. E. A. Malsch, of Victoria. The October meeting will be held at Orange, Texas.

Examination of Candidates for Assistant Surgeon.—The United States Public Health Service announces an examination of candidates, at Washington, D. C., May 31, 1916, for admission to the grade of Assistant Surgeon in the Public Health Service. The candidate must be between 23 and 32 years of age, a graduate of a reputable medical college, and must furnish testimonials from two responsible persons as to professional and

moral character, together with a recent photograph of himself. Candidates must have had one year's hospital experience or two year's professional work. The salary is $2,000 a year and the tenure of office is permanent. For information and invitation to appear before the board of examiners, address Surgeon General, Public Health Service, Washington, D. C.

Association of Medical Officers of the Army and Navy of the Confederate States will hold its twenty-sixth annual meeting at the Tutwiler Hotel, Birmingham, Alabama, May 16, 17 and 18. Invitations are extended to all members, and to those who are eligible to membership, to be present at the meeting. For full information, address Samuel E. Lewis, M. D., Secretary-Treasurer, 1418 Fourteenth Street, N. W., Washington, D. C.

The American Proctologic Society will hold its eighteenth annual meeting in Detroit, Michigan, June 12 and 13, 1916, at the Hotel Statler. A preliminary program has been published which gives promise of material of much interest to the profession. A cordial invitation is extended to the profession to attend the meeting.

Meeting of the American Society of Tropical Medicine. —The thirteenth annual meeting of the American Society of Tropical Medicine will be held in Washington, in the Library of the Hygienic Laboratory, May 9, 10 and 11, 1916, with headquarters at the New Willard Hotel. Dr. Milton J. Rosenau, of Boston, the president, will address the Society on "The Prevention of Tropical Diseases." Among the contributors to the program we note the names of Drs. Joseph D. Weis, C. C. Bass, W. H. Seeman, Ralph Hopkins, J. B. Elliott, Jr., and Sidney K. Simon, of New Orleans.

New Orleans Dispensary for Women and Children.— After closing its doors for much needed repairs, the hospital recently reopened with only ten beds. Donations from various sources were received which will enable the hospital to reorganize on its former footing. During the past month 930 patients were treated. Two new physicians were added to the staff, Dr. J. J. Delambre, visiting physician in diseases of children, and Dr. J. R. D'Aunoy for the medical clinic and as pathologist for the hospital.

Orange Peel for Intestinal Stasis.—According to the claims of a French journal, exhausted orange peel is being used in the French army for chronic constipation. The peel is boiled for an hour. The liquid is used for preparing flavoring mixtures and the refuse is dried and given freely. Not only does the peel seem to stimulate the action of the intestinal canal, but it stimulates the flow of the bile as well. With the discovery of garlic for healing the wounds of soldiers, and orange peel to cure the ill which is responsible for so many of the diseases of humanity, the future indeed looks bright and there should be no cause for pessimism.

Abuse of Charity.—It was recently discovered at Bellevue Hospital that a patient was getting the benefits of that institution at the expense of the taxpayer when he was worth $15,000 or more. This discovery has led to an investigation by Dr. C. J. Whalen, of Chicago, who states that each practicing physician in that city is deprived of no less than $2,500 a year in possible fees by the senseless manner in which uncalled for charity is dispensed. It is estimated that the maintenance of the Bellevue and allied hospitals costs the taxpayer nearly $2,000,000 a year.

Proper Diet for Young Children.—The United States Department of Agriculture has just issued a bulletin containing recipes and direction for mothers on the question of proper food for young children. Clean whole milk, at least a quart a day, is the basis of diet for a child three to six years old, plus bread and other cereals, butter and other fats, vegetables and fruits and "simple sweets." This bulletin may be had by addressing the Department, Washington, D. C.

Awful Conditions in Detroit Slums.—The health department of the city of Detroit recently found almost incredible conditions in the slums of that city. One hundred men and six women were found living in a three-story structure. In a small room with one window, sealed, were found seven beds occupied by fifteen men, one of whom as a young man in the final stages of tuberculosis. The owners of the place were prosecuted.

Movie Theaters and Ventilation.—Out of 518 moving picture theaters in three boroughs of New York City recently tested for ventilation by inspectors of the health department, only 77 were reported perfectly ventilated. Unless a satisfactory excuse can be given by the owners of the defective places for

existing conditions, it is stated that action will be taken against them.

The Samuel D. Gross Prize.—This prize is awarded every five years to the writer of the best original essay, not exceeding 150 printed pages, octavo in length, on some subject in surgical practice, founded upon original investigations, the candidates for the prize to be American citizens. The receiver of the prize shall publish his essay in book form and shall donate one copy of the work to the Samuel D. Gross Library of the Philadelphia Academy of Surgery. The essays must be written singly, in the English language, and must be sent to the Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 S. 22nd Street, Philadelphia, on or before January 1, 1920.

Oklahoma Indians and Trachoma.—Trachoma is said to have a terrible hold upon the Indians in Oklahoma, more so than in any State in the Union. According to a recent government survey, 88 per cent of the pupils enrolled in one Indian school in that State were afflicted with this disease, while 68.72 per cent of all Indian residents on the reservations in Oklahoma have trachoma.

Warm Water Beds in Cambridge Hospital.—The latest feature of the famous military hospital at Cambridge, England, is a ward in which patients sleep on inflated rubber mattresses half submerged in tubs filled with warm water. The water, at a temperature of 100 degrees, is kept flowing through the tub. It is said that patients suffering intensely from wounds received on the battle field are relieved from pain whilst in the water and do not feel anything worse than the usual discomfort from long confinement in bed.

Appropriations by the Rockefeller Foundation.—Appropriations amounting to $1,200,000 for various branches of its activities were recently made by the Rockefeller Foundation. These cover the work of the department recently established at Princeton, N. Y., the study of animal diseases, the Union Medical College in Pekin, China, the aiding of the hospital work of Alexis Carrel in France, and of the prison camps of Europe.

Relief Fund for the Belgian Profession.—The report of the treasurer, Dr. F. F. Simpson, of the committee of American physicians for the aid of the Belgian profession, shows, for the

month ending April 8, 1916, a total disbursement of $7,310.04, and a balance on hand of $631.82. Total receipts previously reported are $7,941.86. No contributions since February 5, 1916.

Coeducation in Medicine.—According to report, the trustees of Columbia University have decided to admit women to the College of Physicians and Surgeons. Columbia is the third large medical school which has recently opened its doors to women students, the School of Medicine of the University of Pennsylvania and the School of Medicine of the Tulane University of Louisiana being the other two. At the present time sixty-three medical colleges in this country admit both sexes.

Pellagra Research Wins Prize.—The Academy of Sciences in Roumania has bestowed the Adamachi prize on Drs. A. Babes and V. Busila, of Bucharest, for their comprehensive report on pellagra in Roumania.

Lunacy in London Decreases.—The London county council's return for 1915 records a striking decrease in the number of lunatics chargeable to London. The decrease affects both male and female, and the cause appears to be due to a great decrease of poverty, the strain of which is one of the causes of insanity. The reduction of poverty is due to the abundance of employment furnished by war work and the withdrawal of a large part of the male population from civil work to the army. The fact of this striking decrease of lunacy is contrary to the prophecy of some of the scientists of this country and of Europe, that there would be a very large increase in the occurrence of lunacy, under war-time conditions.

Students' Enrolllment Limited.—The board of trustees of the University of Pennsylvania has recently adopted a resolution limiting the classes for the first and second years in the School of Medicine to 100 students each. There are now five schools which limit the enrollment of their classes, the other four being Johns Hopkins University, Medical Department; Leland Stanford University, School of Medicine; Rush Medical College, and the University of Minnesota Medical School.

Pediculosis Quarantines Immigrants.—Due to the presence of pediculosis, ninety-one immigrants who arrived in New York City on the *Patris* from the Piraeus, Greece, March 21, were placed under quarantine at Hoffman Island.

Measles Closes Schools and Bars Picture Shows.—The Board of Health of Sunbury, Pa., recently ordered public schools closed and all children under 16 years of age to stay away from picture shows and all places of public amusement because of a serious epidemic of measles. There were 117 cases reported.

Shell-Making Breaks Women's Health.—According to rumor, which occasionally breaks through rigid censorship of affairs in the belligerent countries, young girls are collapsing under the strain put upon them in shell factories. Women and young girls are compelled to work continuously from Friday morning until Saturday noon, with only a slight break for a hurried lunch. A serious problem is confronting the statesmen of these countries as to how they can best conserve the health of the women.

Parents Co-operate With Health Authorities.—As an instance of what may be accomplished when parents co-operate, the Commissioner of Health of New York State cites the fact that in a small town in the State 37 cases of whooping-cough have been reported within three months by families not employing physicians. The parents of Buffalo are therefore compelled by the commissioner to also report communicable diseases within their homes if a physician is not in attendance.

Personals.—Drs. Carroll Kendrick, Charles A. Everett, W. F. Stroud, W. J. Redditt and V. Milton Perry, of Mississippi, are members of the State Legislature.

Dr. Jos. A. O'Hara, coroner for the city of New Orleans, has been made chief of the Neurological Department of the Presbyterian Hospital Annex.

Removals.—Dr. C. B. Alexander, from Alhambra, to Downey, Cal.

Dr. R. F. Harrell, from Alexandria, to the First National Bank Building, Shreveport, La. Dr. Harrell has associated with him Dr. I. H. Smith, of New York.

Died.—On March 16, 1916, Dr. J. N. Ball, of Bogalusa, La., formerly of Tylertown, Miss.

On March 16, 1916, Dr. A. Guilbeau, of Breaux Bridge, La., aged 60 years.

On January 15, 1916, Dr. L. A. Scott, of Kingston, La.

Book Reviews and Notices

Surgical Operations with Local Anesthesia, by Arthur E. Hertzler, M. D. Second edition. Surgery Publishing Company. New York, 1916.

The second edition of Hertzler's "Surgical Operations Under Local Anesthesia" greatly enlarges the scope of his first edition and proves a valuable contribution to this interesting and important field of work. Some of the advice and general remarks in the opening chapters is particularly good, and the writer of this criticism thoroughly agrees with his conclusions regarding the combined use of local and general anesthesia. The discussion of the use and action of quinin is particularly full and thorough and many valuable suggestions are offered for its use. These become particularly interesting when it is remembered that Dr. Hertzler is probably the foremost investigator of this agent, and has, no doubt, had greater experience with its use than most other operators who have gradually drifted away from it fearing its necrotic effects; while these occur, Dr. Herztler admits, when due to faulty technic, he seems to prefer it to other agents or uses it in sequence. Some helpful suggestions are given for the combination of quinin and novocain. On the whole there is at times a rather too free use of quinin, but upon this there may exist a difference of opinion.

While the technic in places is incomplete and a few errors and omissions have unavoidably crept in, the field has been unusually well covered for a volume of its size. The credit of first utilizing the orbital route for reaching the foramen rotundum has been erroneously given to Payr (Arch. f. Klin. Chir. 1903 LXXII, 284) while its origin is American, as it was first demonstrated and successfully used by Matas (Loc. & Reg. Anesthesia. La. State Medical Society, 1900).

The appearance of several volumes upon this subject during the last few years speaks for the interest that this field of work has attracted, and is an indication of the gradual dissemination of its principles and practice among the rank and file of the profession, where its use is most needed and where its benefits to physician and patient alike will be most apparent. Many fundamental principles upon which the local anesthetic practices of to-day are established were first worked out by American pioneers; Corning, Halsted, Crile, Matas, Cushing and others, but the American physicians were slow to appreciate its advantages and it first became more popular abroad under the leadership of Schleich, Reclus, Tuffier, Bier, Braun, Barker and their followers.

We are glad to recognize that it has now found its place in America and assign to this volume of Hertzler's a conspicuous and prominent place in the library of the American physician.

CARROLL W. ALLEN.

Urgent Surgery, by Felix Lejars. Translated into English from the Seventh French Edition by Mr. William S. Dickie and Dr. Ernest Ward. Vol. II, William Wood and Co., New York.

This is the second volume of this well known work, now in its seventh edition. It gives a very adequate discussion of emergency surgery; the descriptions are very clear and the translation has been rendered in a clear and most agreeable style. We can cordially commend the work to those desiring a reliable guide in emergency. PARHAM.

Bone Graft Surgery, by Fred H. Albee, A. B., M .D., F. A. C. S., with 332 Illustrations, three of them in colors. W. B. Saunders & Co. Philadelphia and London, 1915.

The book tells in a very interesting and convincing manner the wide use of the bone graft in orthopedic surgery.

The table of contents gives a good idea of the scope of the book: I. The Fundamental Principles Underlying the Use of the Bone Graft in Surgery; II. Author's Electric Motor Operating Outfit and Technique of Usage; III. The Bone Graft in the Treatment of Pott's Disease and other lesions of the Spine; IV. The Inlay Bone Graft in the Operative Treatment of Fractures; V. Operative Methods for Remodelling or Ankylosing the Hip Joint; VI. The Inlay Bone Graft for Fixation of Tuberculous Knee-Joints; Infantile Paralysis; Osteoarthropathy (Charcot's Disease); The Wedge Graft for Habitual Dislocation of the Patella; VII. The Bone Graft in the Treatment of Diseases and Deformities of the Foot and Leg; VIII. Miscellaneous Surgical Uses of the Bone Graft.

It is hard for those of us who are doing bone surgery to feel as enthusiastic as the author or to agree with him fully as to the results obtained by the use of these procedures.

The method has undoubtedly done a great deal to help bone surgery, especially the use of the graft for Pott's disease of the spine where an autogenous graft is inserted into the split spinous processes of the vertebræ.

The author feels that bone plates and metallic nails favor nonunion, and that their use should be discouraged.

The book marks a distinct advance in this work.

EDWARD S. HATCH.

Laboratory Methods. By B. G. R. Williams, M. D., and E. G. C. Williams, M. D., with an introduction by Victor C. Vaughan, M. D., LL. D. Third edition. C. V. Mosby Company, St. Louis.

The book is written for the physician who wants to do his own laboratory diagnostic work. Doctors are learning and good teachers are teaching that a very modest amount of equipment and a knowledge of technic not difficult to master are all that are required for one to do almost all of the laboratory diagnoses required in everyday practice. This book is intended to present the necessary instructions for such work. C. C. BASS.

Infection and Immunity. Charles E. Simon, B. A., M. D. Third edition, revised and enlarged. Lea & Febiger, Philadelphia.

The appearance of this third edition speaks for at least two things: one, the growing appreciation of the great importance of immunology and serology; and the other the recognition of the authority and ability of the author. So much new and very useful matter is included in this edition that those who have former editions are almost obliged to get this one too. Modern medicine requires a knowledge of the fundamental principles of infection and immunity. This book will be found most useful to physicians and students alike in acquiring such knowledge. BASS.

Diseases of Infants and Children, by Henry Dwight Chapin, A. M., M. D. and Godfrey Roger Pisek, M. D., Sc. D. Third revised edition. William Wood and Company, New York.

Drs. Chapin and Pisek have given to the profession in the presentation of this book a work compact in its general make-up, yet consistent with thoroughness and completeness in the subjects concerning diseases of infants and children.

The classification of diseases and conditions under very definite headings should appeal especially to those who want quick references and at the same time desirous of obtaining details in as condensed form as possible.

The diagramatic tables of measurements are very practical and are arranged in a manner easily remembered. While again, the topographical plates are plain, clean cut and very serviceable.

The chapter on Special Examinations is gone into quite extensively and includes all the latest and most practical tests, their technic and explanations.

Of particular interest is the chapter on Practical Feeding. Here the authors not only explain in commonplace English the details of artificial feeding, but they also insert interesting and simple diagrams illustrating the various steps in making up milk formulas.

Telling one how to make up a formula and actually preparing it are two very different things. We often lose sight of the fact that when dealing with young mothers, who are being confronted with new experiences, the details of which they have never once considered, or perhape even heard of, it is of the utmost importance for us to be extremely plain and simple in our detailed explanations. The authors have therefore very wisely illustrated their article in a manner easily understood and which should make plain the important principles in practical feeding to be taught to the laity.

We would recommend this work to the profession and to the student as a safe guide in the principles of pediatrics.

DANDRIDGE P. WEST.

Diseases of the Skin, by Henry H. Hazen, A. B., M. D. C. V. Mosby Company, St. Louis, 1915.

The chapter on Diagnosis shows the author's first departure from the usual methods of texts on skin diseases; there are other departures in the book. The selective idea of diagnosis is excellent and if expanded would be of even more service to the student of the subject. The chapters on Therapeutics and Hygiene are both tantalizing because of their brevity, but the subject matter is easily worth while.

The arrangement of the material relating to particular diseases is quite original, as the author groups the diseases under unusual headings as "Congenital Affections of the Skin," "Diseases Due to Local Irritation," "Diseases Probably Due to External Infections," "Diseases Due to Systemic Infections With Unknown Organisms," etc. The method is interesting and the author's manner of disposing of each group is also interesting, but the originality certainly removes the work from all possibilities as a text book, no matter how useful it may be as a reference. It is certainly an evidence of individual courage for Dr. Hazen to have so liberally dispensed with the moral traditions of classification; the justification of his method might be debated.

The book is replete with excellent illustrations and the descriptive text is generally clear and succinct. Particular attention has been given to the pathology, which adds to the merit of the book.

Altogether the author has contributed to dermatology an interesting and extended presentation of his views and methods and in a manner which bears the stamp of his individuality.

DYER.

A Text-Book of Physiology: For Medical Students and Physicians. By William H. Howell, Ph. D., M. D. Sixth Edition, thoroughly revised. W. B. Saunders Company, Philadelphia and London, 1915.

The clearness of presentation of the ground work of physiology makes this book an excellent text for medical students. Credit should be given to the author for the careful references to the recent physiological literature which the reader will find at the bottom of each page.

That part of the book dealing with nervous physiology is up to the standard of the previous editions. The physiology of the circulation and respiration is very complete and the student will find his time well spent in studying these difficult subjects as they are taken up and considered by the author.

The internal secretion theories, which are at present accepted, are carefully given; the physiology of the organs of reproduction is too briefly handled and has not received the revision given the subject of the ductless glands.

Whenever necessary the author has gone briefly into the relationship between physiological chemistry and physiology; and at the end of the book one finds the first section of the appendix devoted to the proteins and their classifications. The second section consists of a discussion of diffusion and osmosis.

F. P. CHILLINGWORTH.

Treatise on Fractures, by John B. Roberts, A. M., M. D., F. A. C. S., and Joseph A. Kelly, A. M., M. D. J. B. Lippincott Company. Philadelphia and London, 1916.

There are certain features which single this work out from the mass of books on the subject.

The style is clear, the statements are plain and concise and are apparently based on large personal experience and the treatment adopted in most instances is based on anatomical facts. The space given to anatomical considerations such as the action of muscles in the production of deformity, with illustrative drawings and the consideration of the time of ossification of the epiphyseal lines are particularly valuable at this time when there is need for better results from conservative methods of treatment of fractures.

The chapter devoted to each fracture is complete in every detail, and the method of paragraphing used by the authors should make the book one of easy and ready reference.

It is impossible in a short review to note the good points specially; on the whole it is the best work on fractures we have seen.

ISIDORE COHN.

Publications Received

W. B. SAUNDERS COMPANY. Philadelphia and London, 1916.

The Medical Clinics of Chicago. March, 1916, Volume 1, Number 5.

The Endemic Diseases of the Southern States, by William H. Deaderick, M. D., and Loyd Thompson, M. D.

LEA & FEBIGER. New York and Philadelphia, 1916.

Progressive Medicine, edited by Hobart Amory Hare, M. D., assisted by Leighton F. Appleman, M. D. March 1, 1916.

The Principles and Practice of Perimetry, by Luther C. Peter, A. M., M. D., F. A. C. S.

Pulmonary Tuberculosis, by Maurice Fishberg, M. D.

J. B. LIPPINCOTT COMPANY. Philadelphia and London, 1916.

The International Clinics. Volume 1. Twenty-sixth Series, 1916.

The Basis of Symptoms, by Dr. Rudolph Krehl. Authorized translation from the seventh German edition by Arthur Frederick Beifeld, Ph. B., M. D., with an introduction by A. W. Hewlett, M. D. Third American edition.

Treatise on Fractures, by John B. Roberts, A. M., M. D., F. A. C. S., and Jos. A. Kelly, A. M., M. D.

P. BLAKISTON'S SON & CO. Philadelphia, 1916.

The Practitioner's Medical Dictionary, by George M. Gould, A. M., M. D. Third edition, revised and enlarged, by R. J. E. Scott, M. A., B. C. L., M. D.

RICHARD G. BADGER. Boston, 1916.

Nervous Children, by Beverly R. Tucker, M. D.

Manual of Vital Function Testing Methods and Their Interpretation, by Wilfred M. Barton, M. D.

A. L. CHATTERTON CO. New York, 1916.

A Treatise on Medical Practice, by Otto Juettner, A. M., Sc .M., Ph. D., M. D.

WASHINGTON GOVERNMENT PRINTING OFFICE. Washington, D. C., 1916.

Public Health Reports. Volume 31, Numbers 9, 10, 11, 12 and 13.

United States Naval Medical Bulletin. April, 1916.

Reports of the Department of Health of the Panama Canal for the Months of December, 1915, and January, 1916.

Report of the Department of Health of the Panama Canal for the Year 1915.

Annual Report of the Surgeon General of the Public Health Service of the United States. For the Fiscal Year 1914.

United States Public Health Service Exhibit. At the Panama-Pacific International Exposition, San Francisco, 1915. By W. C. Rucker and C. C. Pierce.

The Navy League Unmasked; The World Wide War Trust. Remarks of Hon. Clyde H. Tavenner, of Illinois, in the House of Representatives. February 15, 1915.

MISCELLANEOUS:

Annual Report of the Library Committee of the College of Physicians of Philadelphia. For the year 1915.

Annual Report of the United Fruit Company Medical Department. 1915. Press of Geo. H. Ellis Co., Boston, 1916.

Transactions of the American Surgical Association. Volume 23. Edited by John F. Binnie, M. D. (William J. Dornan, Philadelphia, 1915).

The Johns Hopkins Hospital Reports. Volume XVII. (The Johns Hopkins Press, 1916).

Reprints

The Advantages and Risks of Combined Local and General Anaesthesia, by W. H. B. Aikins.

The Pineal Gland in Relation to Somatic, Sexual and Mental Development; The Pineal Gland, by Carey Pratt McCord, M. D.

Chronic Appendicitis Pylorospasm and Duodenal Ulcer; Aerophagy; The Roentgen Ray in Gastro-Intestinal Affections; An Improved Stomach Tube, by Charles D. Aaron, Sc. D., M. D.

The Child and the Community; The Responsibility of the State in the Tuberculosis Movement Artificial Pneumothorax, by Edward O. Otis, M. D.

Scientific Management in the Hospital; Hospital Efficiency from the Standpoint of the Efficiency Expert, by Frank B. Gilbreth.

Chronocyclegraph Motion Devices for Measuring Achievement; Motion Models; Motion Study and Time Study Instruments of Precision; Motion Study for Crippled Soldiers; What Scientific Management Means to America's Industrial Position, by Frank B. Gilbreth and Lillian Moler Gilbreth, Ph. D.

Changes Needed in American Secondary Education, by Charles W. Eliot.

The Filterability of Bacillus Bronchisepticus: With an Argument for a Uniform Method of Filtration, by N. S. Ferry, Ph. B., M. D.

A Modern School, by Abraham Flexner.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans for March, 1916.

Cause.	White	Colored	Total
Typhoid Fever	1	1	2
Intermittent Fever (Malarial Cachexia)	1	2	3
Smallpox	.....	.....	....
Measles	1	.....	1
Scarlet Fever	.....	.....	....
Whooping Cough	1	.....	1
Diphtheria and Croup	4	1	5
Influenza	11	6	17
Cholera Nostras	.....	.....	....
Pyemia and Septicemia	2	.....	2
Tuberculosis	48	49	97
Syphilis	2	11	13
Cancer	23	5	28
Rheumatism and Gout	3	1	4
Diabetes	3	1	4
Alcoholism	.....	.....	....
Encephalitis and Meningitis	3	.....	3
Locomotor Ataxia	.....	.....	....
Congestion, Hemorrhage and Softening of Brain	18	7	25
Paralysis	2	.....	2
Convulsions of Infancy	.....	2	2
Other Diseases of Infancy	7	3	10
Tetanus	1	2	3
Other Nervous Diseases	1	2	3
Heart Diseases	68	55	123
Bronchitis	.....	.....	....
Pneumonia and Broncho-Pneumonia	18	33	51
Other Respiratory Diseases	.....	3	3
Ulcer of Stomach	.....	1	1
Other Diseases of the Stomach	2	2	4
Diarrhea, Dysentery and Enteritis	10	4	14
Hernia, Intestinal Obstruction	3	1	4
Cirrhosis of Liver	6	4	10
Other Diseases of the Liver	4	.....	4
Simple Peritonitis	.....	.....	....
Appendicitis	2	1	3
Bright's Disease	22	22	44
Other Genito-Urinary Diseases	13	11	24
Puerperal Diseases	3	1	4
Senile Debility	5	.....	5
Suicide	6	.....	6
Injuries	25	13	38
All Other Causes	28	18	46
Total	347	262	609

Still-born Children—White, 21; colored, 25. Total, 46.

Population of City (estimated)—White, 276,000; colored, 102,000. Total, 378,000.

Death Rate per 1000 per Annum for Month—White, 15.09; colored, 30.82. Total, 19.33. Non-residents excluded, 17.02.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure 30.06
Mean temperature .....64.
Total precipitation ..... 0.64 inches
Prevailing direction of wind, southwest.

New Orleans Medical and Surgical Journal.

VOL. LXVIII. JUNE, 1916. No. 12

Original Articles

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. A complimentary edition of one hundred reprints of his article will be furnished each contributor should he so desire. Covers for same, or any number of reprints, may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

THE CENTRIFUGE CONCENTRATION OF MALARIA PLASMODIA FOR DIAGNOSTIC PURPOSES.*

By FOSTER M. JOHNS, M. D., New Orleans.

It has only been a few years since the great majority of laboratory workers were content to examine and diagnose malaria plasmodia with unstained cover-slip preparations. With the advent of polychrome staining methods it has been found that a great many active cases of malaria were being overlooked. Within very recent years our knowledge of some of the more obscure symptoms of chronic malaria and its complications has been considerably advanced. The majority of these cases so very closely simulate diseases of very unfavorable prognosis, such as pernicious anemia, chlorosis, splenic anemia, syphilis, etc., that the clinical diagnosis is often in doubt. A positive diagnosis of malaria in any one of these cases would mean everything to the patient. Often the number of demonstrable malaria parasites in the peripheral blood of such patients

*Read before the Orleans Parish Medical Society, February 28, 1916. [Received for Publication, April 12, 1916.—Eds.]

is so extremely small that one of the usual examinations will not reveal parasites. As a matter of fact it often takes two, three, four or five examinations, extending over a period of weeks to discover a single parasite. When the correct diagnosis is established, however, proper and specific treatment of the patient leads to cure of what was an apparently hopeless condition. With this class of cases the therapeutic method of diagnosis is most unreliable—the greatest number of cases taking months to efface the visible results of a disease that has lasted for many months; and without a certain diagnosis to begin with the treatment given for malaria is generally soon dropped.

The centrifuge method of concentrating malaria plasmodia for diagnostic or other purposes, as described by Dr. C. C. Bass and myself, has been employed now for more than four years.* While requiring some laboratory apparatus the method is just as simple as many routine laboratory examinations, such as the Widal or Wassermann reactions. One of our junior students has been able to make very useful application of the method in some of the wards of the Charity Hospital. For the class of cases in which it is especially useful even as complicated a test as the Wassermann reaction would certainly be well worth the time and trouble spent in its making.

Briefly the method is as folows:

1. Draw 10 c. c. blood.

2. Add 0.2 c. c. of a 50½ dextrose solution to prevent death or other changes in the parasites.

3. Defibrinate to prevent coagulation; or add 0.2 c. c. of a 50% solution of sodium citrate. When using the sodium citrate the blood platelets may be more or less troublesome to one not thoroughly familiar with malaria parasites.

4. Place half the blood in each of two centrifuge tubes and centrifuge until the cells have completely separated from the plasma, and the leucocytes have risen to the surface of the cell column. The plasmodia rise to the surface with the leucocytes.

5. Skim off about one c. c. from the top of the cell columns,

*Full details of this technic will be found in the article: A Method of Concentrating Malaria Plasmodia for Diagnostic and Other Purposes. C. C. Bass and F. M. Johns. The **Am. Jour. Trop. Dis. and Prevent. Med.** Vol. III, No. 5, Nov., 1915.

including the leucocyte layers. Place this into a smaller tube (diameter) and centrifuge as before.

6. Draw off the leucocyte layer carefully and make one or more blood spreads. Stain and examine.

In the best preparations made in this manner malaria plasmodia are concentrated about nine hundred times. Very small plasmodia just immediately after having entered red cells are not concentrated to the same extent. One should find nearly as many plasmodia in one minute spent examining such a preparation as he would in fifteen hours spent in examining the usual preparation of the same blood. In many instances in which after several hours of diligent search for plasmodia in ordinary preparations without finding any, a few minutes spent on centrifuge preparations of the same blood many plasmodia were found.

We believe this method of making preparations for examination will be found very useful in suitable cases. Among suitable cases may be mentioned those in which plasmodia are not found by the usual methods; those in which it is very important to exclude malaria from the diagnosis; those in which the number of plasmodia in the blood has been greatreduced by quinin treatment; and those cases in which it is desirable to make the most exclusive examination before final discharge from treatment. The value of the evidence of a cure as shown by negative findings with this method has yet to be absolutely determined by observations made upon a large number of cases nnder observation for a sufficient length of time.

DISCUSSION ON DR. JOHN'S PAPER.

The Chairman: Can I call on you, Dr. Elliott?

Dr. J. B. Elliott, Jr.: In the past five months, we have had several cases in my wards which were clinically malaria, but we could not demonstrate the plasdodium by any of the ordinary methods. In almost every one of these cases Drs. Bass and Johns were able to show plasmodia by their new plan of examination, so you can see what a great help it has been to the clinical man.

Dr. Allan Eustis: I am very much interested in this work, especially in the slides shown. Unfortunately, I came in late, and as I think it would bear repetition, I would appreciate it very much if you will give us, Doctor, a short resume of the technic, as I cannot

exactly understand the technic. I have had no clinical experience at all.

Dr. Johns (in closing): In answer to Dr. Walther's question I will say that we have not attempted the concentration of bacterial organisms. According to the technic by which these concentrations have been obtained the larger objects go to the bottom first, the next largest go to the bottom next, and so on. Continued centrifuging then causes the larger objects to rise, leaving the smallest elements (i. e., erythrocytes) at the bottom. Bacteria being very small would probably be forced clean to the bottom. As a rule the bacteria are so extremely few in number in the blood, as for instance in typhoid where there are only two or three per cubic centimeter, that the chances of mistake in making a diagnosis upon the finding of these few organisms would be very great.

Dr. Jamison's remarks would lead one to think that the technic was rather difficult. One of our medical students has made a number of successful concentrations without any previous special laboratory training.

In answer to Dr. Eustis I will only say at present that we have secured enough pure malaria plasmodia for the preparation of antigenic solutions. We are now engaged in the study of the various antibody and complement fixation tests. The results of these studies will be made the subject of a later communication. At present we can only say that certain immune bodies have been proven to exist in malarial blood sera.

INTRA-CAPSULAR FRACTURES OF THE FEMUR: A REVIEW OF HOSPITAL CASES WITH SUGGESTIONS AS TO DIAGNOSIS AND TREATMENT.*

By JAS. T. NIX, JR., B. Sc., M. D., New Orleans, La.

Intra-capsular is possibly not the most precise term to apply to these fractures, for, in many instances, the break is intra and extra capsular at the same time, on account of the irregular oblique attachment of the capsular ligament—the so-called mixed fracture. I have adopted this nomenclature, however, because it is the one most popular with the profession at large, because it has always been in use at the Charity Hospital, and, most important, because a fracture within the capsular ligament possesses certain advantages and disadvantages not found in the extra-capsular variety.

As a student of medicine, a hospital intern, and a young prac-

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1. Mrs. J. T., 82 years old. Complete intra-capsular fracture of left femur.
2. E. M., 15 years old. Incomplete fracture of neck of femur with coxa vara deformity resulting.
3. Mrs. J. T., standing unaided eight months later, no apparent shortening.

titioner, I always regarded the intra-capsular fracture as a most formidable injury, a sentence from the jury which sits on high, demanding immediate execution of "the terminal decree" or granting only a short reprieve. In the most favorable cases, treatment or no treatment, all to be hoped for was mere prolongation of life, little or no attention being directed to the correction of the deformity or establishment of a useful limb. Analysis of hospital cases, observation of the results at other clinics, and careful study of a few cases encountered in private practice, have convinced the author that death should seldom be expected, and in every case it should be the aim of the attending physician to restore the affected limb, as nearly as possible, to normal.

From April, 1905, to October, 1915, about ten and one-half years, the Charity Hospital records show 575 cases of simple fracture of the femur, 96 or 16.7% being the intra-capsular variety, about one case in every six.

It is comparatively rare in the negro race, there being only fourteen cases recorded or 14.5%. This can probably be explained by the fact that the negroes' bones as a rule are harder than the Caucasians' and are more accustomed to strain.

Sex seems to make no difference, there being only a slight increase on the side of males over females, the proportion 56 to 40.

The predisposing factors of most consequence are extremes of life, old age and youth, especially the former. Any condition of youth tending to retard development, or impose upon the bony framework a greater strain, or old age with its beginning rarefaction of bone, increase in lime salts, decrease in phosphates and diminished muscular and ligamentous tone, predispose toward all fractures, especially of the neck of the femur.

In analyzing the fractures by decades one finds up to 10 years of age none recorded; from 10 to 20 years, 7 fractures, the oldest being 15 years, the youngest 13 years; 20 to 30 years, the age of superlative physical development, one fracture. After 30 years a gradual increase until 70 years; from 30 to 40 years, 6 cases; 40 to 50 years, 7 cases; 50 to 60 years, 15 cases; 60 to 70 years, 29 cases. Now a gradual decrease, 70 to 80 years, 20 cases; 80 to 90 years, 8 cases; 90 to 100 years, 1 case. There is a total of 94 cases in whom the age is recorded. From this survey the most striking features are the comparative frequency

in adolescence, 7.4%; the practical rarity in mid-life, 1.06%, and the preponderance in old age, 91.54%.

There seems to be no predilection for either hip, a few more being found on the left side than on the right.

Direct causes should be classified according to the age of the patient. In the aged, a slight misstep or fall will cause the bone to snap, viz: tripping on a door sill, steps, or irregularity in sidewalk, quick movements as rising suddenly from a chair, falling down steps and alighting from street cars. In the young adult, a powerful blow is required to produce fracture. In youth, the bone is imperfectly developed, and sometimes slight accidents, like those of the first class are able to cause a fracture. Wrestling, jumping, and participating in outdoor sports usually precipitate the trouble, if it occurs at this age.

Treatment, the most important factor from the patients' standpoint, was the least improved on, the conventional sand bags and Buck's extension holding a prominent place among therapeutic measures today. No two surgeons seemed to agree on the best method of treatment, but in each service, a different outline was followed. If the patient survived and left the hospital alive, the usefulness and function of the limb were not investigated. Judging from all the histories I do not believe in one single instance was there any attempt made at complete reduction of the deformity and restoration of normal function. In several instances the records show that the affected limb was put up in a plaster spica, the limb being in complete abduction, but in only two or three at thte outside figure was a general anesthetic given and no mention is made of reduction of the deformity. In the great majority of these few cases which were put up in plaster, the cast was uncomfortable and had to be removed, Buck's extension being resorted to and applied in the same old way as it was thirty years ago.

The relative percentage in the choice of methods is as follows: Buck's extension 35.2%; plaster cast 29.8%; extension with cast at end of 6 weeks, 10%; Liston splint, 9%; Hodgins splint, 8%, and sand bags, 8%. From these statistics we see that Buck's extension was by far the favorite technic, although the best results seemed to be obtained from the cast.

From the standpoint of mortality, the results of the Charity Hospital compare most favorably with other institutions. Of

a total of 96 cases, only 15 died as a result of the injury, or its immediate complications, or 15.6% mortality, the cause of death being usually ascribed to traumatic delirium, hypostatic pneumonia, mental and surgical shock, nephritis and arterio-sclerosis.

The remarkable fact is that not one of the adolescent cases seemed to be very sick at any time, a few of them being able to walk, if assisted, immediately following the accident. The youngest death recorded was 56 years. Of the total 15 deaths, 14 were above 60 years of age, or 93.5%. Although 37.5% of all cases recorded were under 60 years of age, only one death is recorded during this period of life, or 6.7%. In this large percentage of cases, 37.5%, who, nothing otherwise complicating, are destined to live many years, complete restoration on the injured member to normal should always be attempted.

Thus, from a standpoint of mortality, treatment was most successful, but as regards restoration of contour and function, scarcely ever was anything attempted, consequently, the end results were very poor.

Having finished the review of these cases, before discussing them, let us recall a few salient points concerning the anatomy of the hip joint.

The antero-posterior diameter of the femoral neck is shorter than at any point in the shaft of the bone. To offset this, nature has thrown around the joint a powerful capsular ligament, which serves as a protection and acts as an antero-posterior splint. The periosteum at the neck of the femur is much thicker and tougher than at any place along the bone, and frequently we find fractures, especially in the young, when the periosteum is only partially or not at all lacerated and the fracture is subperiosteal.

The longitudinal fibers of the capsular ligament are prolonged anteriorly into the ilio-femoral ligament and serve as an anterior splint to the joint. The ligamentum teres, having little function in health, steadies the short end of the bone, when fractured, and renders apposition more perfect.

Diagnosis. In the old, it is usually easy, for we are on the lookout for such injuries, and immediately upon obtaining a history of sudden and complete disability of the hip joint, following the slightest injury, our diagnosis becomes fixed on intra-capsular fracture. There are some cases in whom there is no change

in the rotundity of the limb and function is only partially lost. An X-ray examination is the only positive diagnosis in these cases.

I recall a case which I saw in Boston in 1913. The patient was referred to the orthopedist for examination. The only abnormality found was pain, intensified by moving the joint, and a diagnosis of peri-arthritis of hip was made. X-ray examination showed a complete sub-periosteal fracture of the neck of the femur.

In youth do we find a preponderance of mistakes in diagnosis. Every such mistake at this age is an unpardonable surgical crime, for it excludes the patient from a sound and healthy limb, and usually makes of him a cripple for life.

I will cite a single instance of a patient called to my attention about eight months ago:

E. M., white, male, 15 years old, living at 2620 N. Tonti St. Family history, negative; previous history: In 1911, patient had typhoid fever, after which he became very fat in the space of about 6 months. Prior to that time his health was perfect. In October, 1913, he fell from a horse and hurt his left hip, being unable to walk for one week, after which time he walked with a decided limp. Condition rapidly grew worse until he was finally taken to the Charity Hospital for treatment. Limb was put up in Buck's extension, and a series of X-ray pictures taken with the idea of locating a tubercular focus. Patient was very fat and consequently pictures were very poor. Reports were always negative as to findings. Patient improved under extension treatment and left the hospital. About 9 months later, while in a moving picture show in Canal St., he slipped and fell on the right hip, causing severe pain, but he managed to get to the hospital. X-ray pictures were again taken, and in one instance, the interpretation stated "evidence of an old fracture." Extension was again applied and later a plaster cast. Patient improved and left the hospital. In every instance after entering the hospital tuberculosis of the hip was suspected and the X-ray reports would neither affirm nor deny. Tuberculin tests were applied, but in every instance they were negative. Shortly after this the patient was called to my attention and the following points of interest noted: An apparent perfect specimen of health, overly fat. He could scarcely walk for abduction on each side was completely lost, and both limbs were held in a position of extreme adduction with outward rotation and eversion of the feet. There was bilateral shortening making length of limbs about equal. A provisional diagnosis of coxa vara adolescens was made and further requests for X-rays. Some very good pictures were then obtained and the crippling deformity easily explained. The coxa vara on

each side was secondary to an unreduced fracture of the neck of the femur. No line of treatment in this case could do any appreciable good unless the following open operation were performed: a cuneiform osteotomy beneath the great trochanter, rotate inwardly the femur and put the limb in normal complete abduction in a plaster cast. Patient would not submit to an operation.

What I wish to emphasize is that this boy could have been entirely cured if the proper remedies were instituted at the time of injury, and the correct diagnosis made.

What should have been done for this boy, and, in my opinion, should be done in every intra-capsular fracture, where the patient is not too profoundly shocked, is the treatment advocated by Royal Whitman of the Ruptured and Crippled Hospital of New York, namely, treat the fracture consistently as you would a fracture in any other bone of the body, reduce, align and immobilize. Anesthetize the patient so as to relax the muscles and be able to work at ease. Place on pelvic support and apply perineal bar for counter extension. After having patient fully anesthetized and placed in position, the important points in the treatment are as follows:

1st. Slightly flex and rotate limb inward, elevating great trochanter.

2nd. Overcome shortening with forcible extension.

3rd. Abduct sound limb to its normal limit as a guide, then abduct injured side equally.

Now the fracture is reduced and the broken fragment aligned. Immobilize with a spica cast, including the foot, allow the cast to remain on for six to eight weeks, and do not permit patient to bear full body weight on limb for four to six months.

By the first principle of treatment you overcome the natural force of gravity which causes femur to drop and leg to rotate outward.

By the second you reduce the shortening, stretching the contracted pelvi-trochanteric muscles, and bringing the great trochanter down to Nelaton's line.

By the third you align the fragments, making tense the capsular ligament and holding the broken ends in the same plane, pulling on the ligamentum teres, steadies the head of the femur and makes taut the strong adductor muscles, in this wise keeping the broken ends approximated. Nature has provided the

joint with ample means of protection against injury, and in case of accident, these natural forces may be utilized to establish a cure.

During the past two years I have treated several patients by this method, and have obtained excellent results. I will relate one which I consider an extreme case where this technic was adopted and gave absolute satisfaction.

Mrs. J. T., 82 years old, born in Ireland, very active for her age. In August, 1915, while walking, she stumbled over a brick and was unable to rise. Pain was intense in the left hip from which patient could gét no relief, no matter in what position the limb was placed. Leg and thigh of injured side were rotated outward, internal rotation being practically nil, and measurements elicited two inches shortening, the great trochanter being noticeably above Nelaton's line. A diagnosis of intra-capsular fracture of the left femur was made and later verified by X-ray. Patient was removed to Hotel Dieu, anesthetized with morphin-scopolamine, and the treatment as already outlined was applied in detail. The old lady is now able to walk without any support whatever, there is little or no shortening, and function is almost normal.

In Brief: One of every six fractures of the femur is of the intra-capsular variety.

It is rare in the negro.

Sex and the side on which the fracture occurs seem to offer no predisposing factors.

It is practically absent in childhood, common in adolescence, rare in the young adult, and frequent in old age.

The mortality is comparatively low and limited to advanced years.

Diagnosis is sometimes difficult and should, whenever possible, be verified by the X-ray.

Treat the fracture as a fracture, consistently and logically, viz, reduce by extension, align by abduction, and immobilize by fixation with a spica cast.

DISCUSSION ON DR. NIX'S PAPER.

Dr. H. B. Gessner: The treatment of Whitman is a very satisfactory one and it gives good results. I think we are indebted to the doctor for this interesting review of the Charity Hospital cases, and the statistics which he mentions. I have not anything to say except to add my favorable testimony to this treatment for fractures.

Dr. A. Granger called the attention of the Society to the distortion of the Rœntgen shadows due to faulty position of the patient and the possibility of errors in interpretation from that cause. He illustrated his remarks with two lantern slides made of the hip of the same individual, one when he was placed in the correct position and the other when placed in the faulty position invariably assumed by patients unless the operator is on the alert and corrects it; that is, lying more towards the affected hip and with the limb in external rotation. He pointed out the fact that in the second slide the shortened shadow of the femoral neck and the close proximity of the shadows of the femoral head and of the greater trochanter might easily lead to the mistaken diagnosis of intracapsular fracture of the neck of the femur with impaction. The larger than normal shadow of the lesser trochanter means always that the position of the patient was faulty and that his lower extremity was in external rotation. When the limb is in internal rotation the same shortening of the femoral neck usually takes place, but the shadow of the lesser trochanter is no longer visible.

Dr. Nix (in closing): There is one thing I would like to say. This treatment was first suggested by Dr. Whitman in 1900, and I was surprised, after reviewing the history at the hospital, that I didn't see one single instance where the treatment is applied. I saw several cases where they made use of the plaster cast with abduction, but there is no mention of correction of the deformity.

SYMPOSIUM ON DIPHTHERIA AND DIPHTHERIA CARRIERS.*

I.

CONTROL OF DIPHTHERIA IN PUBLIC SCHOOLS AND CULTURAL SURVEY OF NEWCOMB COLLEGE.

By EDMUND MOSS, M. D., New Orleans.

I am presenting for your consideration tonight, a recent survey of the pupils, teachers and employees of Newcomb College. This survey was made to determine what percentage were diphtheria carriers or were harboring, transiently it may be, the Klebs-Lœffler bacillus in the secretions of the nose or throat.

With the assistance of Dr. D. P. West and Dr. C. W. Duval and staff, cultures were taken as follows:

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Cultures taken	Total nose cultures	Total throat cultures	Total nose positive	Total throat positive	Total positive cultures
1220	610	610	32	16	48
		Controls			
254	127	127	..	..	..

Total cultures taken, nose and throat.....1474

Those cases proving positive were at once sent home with notifications of the conditions found. On the third day after the carrier was sent home, Dr. West, Dr. James Bethea and myself commenced taking control cultures and continued taking them every two days in each case, until two negatives were obtained. With the permission of Dr. W. T. O'Reilly, president of the City Board of Health, the houses of the carriers were not flagged, and I was permitted to discharge each case as soon as two negative cultures were obtained.

As each carrier was treated by her own physician, I do not know what methods were used in their treatment, but judging from the short length of time it took to clear up the situation, all the remedies used were satisfactory.

Least number of days required to clear up a carrier..... 4
Greatest number of days required to clear up a carrier....11
Average number of days required to clear up a carrier.....6½

The six cases treated by me received daily applications of 50% iodized phenol to throat and pharynx, and 20% argyrol dropped in nostrils at three-hour intervals. These cases all cleared up in from four to six days.

To my knowledge we have had no further trouble in Newcomb since this survey was completed.

My method of procedure in the public schools of the city, though open to criticism and far frrom perfect, is the best I can do when dealing with 45,000 children. When a school shows, from the daily reports received from the Board of Health, that three or more cases of the disease have occurred among the pupils, or if my map shows the district from which a school draws its pupils is becoming infected, a physician is detailed to examine the noses and throats of every pupil attending school, and cultures are taken of any nose or throat showing the least sign of irritation. All cultured pupils are excluded at once and only allowed to return after we receive a

negative report from the laboratory. Those proving positive are handled by the Board of Health, and treated as cases of diphtheria. Any school in which our cultures prove positive is visited every few days and the pupils re-examined until we fail to get positive cultures.

This method, as imperfect as it seems, has enabled us to keep the schools open and stamp out the neighborhood infection by gradually weeding out the carriers; whereas, in several instances where I have closed a school for one or more weeks, I found that the disease not only did not disappear, but when the school was re-opened, I had more cases than before closing.

The following will give you some idea of the method used in individual schools:

Howard School No. 1— Date	Number of cultures taken	Negative	Positive
September 21, 1915	4	4	..
October 12, 1915	3	1	2
October 15, 1915	2	2	..
October 19, 1915	2	2	..
December 21, 1915	42	23	19
December 23, 1915	22	18	4
January 3, 1916	23	18	5
January 7, 1916	9	7	2
	107	75	32

Kruttschnitt School— Date	Number of cultures taken	Negative	Positive
December 23, 1915	12	5	7
January 3, 1916	11	10	1
January 5, 1916	3	1	2
February 18, 1916	9	9	..
	35	25	10

Session 1914-1915—

Total number of noses and throats examined	147,932
Total number of cultures taken	1,256
Number of cultures proving negative	1,014
Number of cultures proving positive	242

Session 1915-1916—

Total number of noses and throats examined	98,981
Total number of cultures taken	667
Number of cultures proving negative	534
Number of cultures proving positive	133

On this date, March 27, there are only eighteen active cases of diphtheria among the public school pupils of New Orleans.

My conclusions are—that in a threatened outbreak of this disease, the city schools should not be closed, but if put under proper medical supervision they may be kept open and instead of spreading, will help to stamp out the disease.

My object in the above is to show how important is the eradication of the carrier in any community, as I believe in all of our outbreaks the carrier is the chief offender. I also hope that the discussion which is to follow the above, will bring forward some specific for the clearing up of diphtheria carriers.

II.

CULTURAL SURVEY OF TULANE UNIVERSITY.

By W. A. LOVE, M. D., New Orleans.

This paper, as presented tonight, is not intended to be a scientific discourse upon diphtheria and the carriers of that disease, but is a report of the actual findings in a recent cultural survey of the several departments of Tulane University. In presenting the facts of this survey, we merely wish to give to the society our results and to beg the privilege of making a few observations. We hope that the discussion will furnish the interesting portion of the program of the evening and the real benefit to be derived from a symposium such as this.

Just how much good has been accomplished by this survey, from the standpoint of prophylaxis, is a matter of opinion, but we believe that our data is valuable and has been sufficiently extensive as to the numbers of men and women examined, to make a good statistical exhibit upon which to base opinions and deductions.

During the fall of last year, the rather widespread prevalence of diphtheria in the city made it expedient that cultural controls be made of Tulane and Newcomb Colleges, and this work was undertaken by the Department of Bacteriology of Tulane University, acting in co-operation with the medical officers of the two institutions.

Permit me to make a report of our findings and to make a few observations that came to our minds as a result of the investigation and the subsequent treatment of the carriers found.

This survey was made to ascertain the true number of infected cases among the students, faculty and employees of the university, and was as complete as it could be made. Some few were not cultured for one reason or another, but the 716 cases examined gave us good data as to the degree of infection that might exist unsuspected in so large a body of persons.

Total number of cases examined	716
Total number positive for Diphtheria—	
Nasal	88
Throat	33
Total positive cultures	121
Cases showing both nose and throat positive	9
Total of infected cases	112

As carriers of the disease there can be no great difference, from the standpoint of danger to the public health, in the nose and the throat carrier and we see that there were found 112 cases positive among 716 examined, or a percentage of about 15½%.

We will not raise the issue as to how serious this situation was as a like ratio of infection probably existed throughout the entire community, but will try to report those things of statistical and clinical interest that came to light as we cleared up our carriers.

The medical officer of the university was furnished sufficient help to handle the situation, and with the advice of Dr. Lynch and of Dr. Duval and his associates, active steps were taken to isolate and investigate each infected case. The City Board of Health very kindly allowed us to act as their deputies in handling the details of the quarantine.

With the assistance of six of the younger members of the medical faculty, daily cultures were made of all cases and a routine of nasal and laryngeal antisepsis was carried out. Thirty-three and one-third per cent peroxide of hydrogen gargle, and 15% argyrol in the nose was the measure adopted, and the cases that we will term "accidental" carriers cleared up readily without further treatment. Statistically, the time necessary to produce results with these "accidental" carriers,' was as follows:

Negative after two cultures (taken on successive days):	
Nasal	62
Throat	13
Negative after three cultures:	
Nasal	5
Throat	5
Negative after four cultures:	
Nasal	10
Throat	5
Negative after five cultures:	
Nasal	2
Throat	1
Negative after six cultures:	
Nasal	2
Throat	0
Total of accidental carriers	105

Cultures were taken daily from the nose and throat of the above cases; no clinical manifestations of diphtheria were present, and no treatment other than the local applications was given, except that four of the cases showed at original examination such virulent cultures of diphtheria that it was thought best to give them prophylactic injections of 10,000 units of anti-diphtheria serum, for their own protection.

Seven cases persisted positive after one week of active local treatment, and we felt justified in considering these as true carriers. As such they were reported to the City Health Board and were placed under rigorous quarantine and more strenuous measures adopted to rid them of the infection. These cases had shown positive cultures from secretion and throat swabs made from freshly gargled throats and from nasal puddles of argyrol.

As we had anticipated some true and persistent carriers from our army of infected, Dr. Lanford had selected some of the more virulent cultures from our stock that had accumulated during the survey and had prepared a sufficient quantity of autogenous vaccin to use for the treatment of these cases. Additional nasal and throat treatment, that will be detailed by Dr. Lynch, was used in conjunction with the vaccin treatment.

Of the seven persistent carriers, three showed infections of both the nose and throat, while four were nasal infections alone. The same vaccin treatment was applied to all.

The initial dose of vaccin was 100,000,000 killed bacteria;
2nd day, 250,000,000;
3rd day, 500,000,000;
4th day, 500,000,000;
5th and subsequent days, 1 billion.

The cases reacted as follows:

One case cleared on the 11th day of local treatment and on the 4th day of vaccin treatment.

Four cases cleared on the 12th day of local treatment and on the 5th day of vaccin treatment.

One case cleared on the 14th day of local and on the 7th day of vaccin treatment.

One case persisted until the 31st day of local treatment and the 24th day of vaccin treatment.

N. B. This last case had in all four injections of 1 billion killed bacteria in addition to the smaller preliminary injections. He was treated incidentally by Dr. Lynch, who can give us some idea of the peculiar persistency of the infection.

Having reviewed the survey as carried out, there are several points of interest that were noted:

The infected cases were practically all free from throat discomfort, few were suffering from any kind of nasal discharge and all professed to be in the best of health.

Of the seven true carriers, three showed a slight rise (about 1 degree) of temperature; two complained of headache; one showed an elevation of blood pressure and a marked acceleration of pulse rate. There was no loss of appetite, for which I can vouch, as five of these carriers were quarantined in the Tulane Infirmary, and were capable of consuming double rations.

The injections of vaccin, even in the massive doses, caused no local or constitutional reaction when given daily to the true carriers.

Cultural accuracy, in the true carriers, was not affected by taking of cultures from recently disinfected mucous membranes, as evidenced by the persistency of the positive findings in the true carrier cases. These men were anxious to escape frrom quarantine, and kept a careful lookout for the man with the culture tubes, and at his approach to the infirmary, would deluge nose and throat with all of the antiseptics at hand.

Finally, the observation that seems of the most importance. We must realize that it is only by raising the individual im-

munity of the carrier by the use of vaccins, and those vaccins preferably of the autogenous variety, that we can clear up our chronically infected diphtheritics.

In closing, the reporter wishes to express the hope that this and the report of Dr. Moss will furnish a basis for a discussion that will help all of us to a clearer understanding of the diphtheria carrier, and I wish personally to say that although there is a diversity of opinion as to whether or no any good has been accomplished by these surveys, they have helped me to understand in a small way what should be tried to help the carrier of the diphtheria organism.

III.

CLINICAL ASPECTS OF DIPHTHERIA.

By R. CLYDE LYNCH, M. D., New Orleans.

I occupy rather an unusual position in this program, being called upon to discuss the clinical side of diphtheria, when the main papers concern the procedures adopted for the control of epidemics or outbreaks in places of congregation, schools, asylums and the like.

I have no idea in outlining a definite plan of treatment as a suggestion for you to follow; on the contrary, I feel your better fitness, as men of general clinical practice, to outline for me a routine. What I have in mind is to make such statements, ask such questions and possibly venture a suggestion that may bring from you such a discussion as to make clear for all of us the why and wherefore for our clinical practice.

Diphtheria is primarily a local disease, exerting its harmful influences by the production of toxin generated by the organism causing the diphtheritic process, this toxin circulates in the blood and later finds its way into the tissue fluids and finally becomes attached to the cells. According to Ehrlich this toxic element is made up of three substances, toxoid, toxin, and toxone. The first is harmless, the second gives rise to the local and acute symptoms, the last having a selective affinity for the nerve tissue. It is also stated by Krauss that these cells that have taken up toxin will give it up if the surrounding fluid is free from toxin or contains antitoxin.

We have the reasons for a large single initial does fairly well founded. Sufficient should be given to neutralize all toxin in

the blood stream, with sufficient left to press on into the tissues and around the cells that we may not only have a rapid subsidence in the gross clinical manifestations, but also to prevent the selective action of the toxone element on nerve tissue and thus avoid the disastrous secondary complications.

The dose should be given routinely intramusculary because of the abundant proof of its more rapid absorption into the blood stream, being ten times faster than the subcutaneous method. At the same time there is less local reaction and discomfort. I select the buttocks always and give the dose as deep as the needle will permit, there follows no surface soreness or redness and the patients may turn as they choose in bed.

In the very serious or malignant cases the dose should be given intravenously, this route being about 100 times faster than by the subcutaneous method and requiring about one-twentieth the quantity to produce the same effect. Besson reports 200 cases treated by this means without a single death. I have used it six times and obtained a very marked and rapid relief in five, the sixth dying five hours after injection from a cardiac dilation and not due, so far as I know, to the method of injection. I trust you will discuss this phase of the treatment, as it seems very important that we have standard information upon this point.

If one remembers that it takes from 48 to 72 hours from the time of injection subcutaneously until the greatest concentration of antitoxin element is in the blood, one sees the justification for the intramuscular and intravenous routes over the subcutaneous, as is now usually employed, especially in the more serious and malignant cases. This offers the explanation for not repeating the dose under six or twelve hours, and a plea again for one initial curative dose and why some advocate a moderate dose and wait from two to four days before its repetition.

How may we combat the effect of the serum on the body cells in those for some reason susceptible to this action? Kolmer maintains that serum sickness is a true anaphylactic reaction delayed for a period from 36 hours to 16 days. Those who manifest sensitization by asthma, hay fever and urticarial symptoms, when around stables or horses, should be given serum with the greatest caution. Anti-anaphylaxis may be produced by the in-

jection of ½ c. c. of serum four or five hours before the medicinal dose; when this latter is administered it should be accompanied by atropin and caffein to protect against respiratory depression. The injection should be made according to the technic suggested by Bass, namely, subcutaneously, in an extremity below an applied, though not tightened, constrictor, and at least a half hour by the clock taken to complete the injection.

Horse serum is proteid element and the poison, a proteid poison, the symptoms of which resemble an acid toxemia. With this idea I have for the past two years put my patients on a proteid free diet for at least ten days following the injection; have alkalinized them by the administration of sodium bicarbonate and sodium citrate and magnesium oxide (milk of magnesia) and have administered formalin which seems to counteract nicely the late anaphylactic symptoms. In many cases even where serum has been administered for some previous condition, this plan has worked beautifully, and I suggest it to you for trial.

Antitoxin neutralizes the toxin only and has no effect on the organism; in fact, they may thrive during the period of a large dose of antitoxin.

What can we do for retained bacteria cases and carriers? Many will yield to simple local antiseptic gargles and sprays of peroxide, formalin, antipyrin, salol, alcohol, permanganate of zinc, staphylococcus suspensions, lactic acid and buttermilk; this last I urge you to try. It is simple, bland and can be used every half hour as a nasal douche and gargle. By local applications, silver nitrate, argyrol, resorcin in alcohol, iodin phenol, ichthyol, trikresol, kaolin; the number of the suggestions speaks for their uncertainty.

Vaccin or suspension of dead bacteria, gives usually, the best results and I refer you to the work of Dr. Arthur Weil of this city, in this respect (New Orleans Medical and Surgical Journal, November, 1914. Transaction A. L. R. & O. Society, 1914).

Tonsillectomy will finally remove the source of supply, and so far, I have not seen or read of a failure and have had no bad results.

In the control of outbreaks of diphtheria in asylums, schools, jails and the like we have in Schick's test for immunity a most valuable aid. One fiftieth of the minnimum lethal dose of diphtheria toxin for a 250 grain guinea pig, brought up in bulk to

0.2 c. c., injected intradermically will produce a definite local reaction in those who are susceptible to the disease. This at once separates the inmates into non-susceptible and susceptible cases; the former, if culturally negative, need no attention; the latter, if exposed, should be immunized by the injection of 1,000 units of antitoxin injection, which will confer immunity from two to four weeks, then can give Von Behring's toxin antitoxin injection, which will confer immunity from two years to life.

Do you believe the same plan should be followed in families? On account of anaphylaxis I have thought for the past three years that it was not best to advertise immunizing doses be given, unless it were possible to secure some other media than horse serum. Our producers of antitoxin would do well to prepare immunizing antitoxin from sheep, cows or such, then should there be later need for medicinal doses one could be safe in employing horse antitoxin . Will you discuss this point?

If the injection of Von Behring's toxin antitoxin with 1,000,000,000 killed diphtheria bacteria will confer immunity for two years to life, would it not be a Godsend to demand of every school child this certificate before his entrance into school, just as is nw done in the matter of vaccination for smallpox? A negative Schick or a Von Behring confering immunity would limit our diphtheria to but a few cases.

DISCUSSION ON SYMPOSIUM ON DIPHTHERIA.

Dr. Homer Dupuy: The vaccin therapy seemed to be the only rift in the clouds which promised results. In ward 48 of the Charity Hospital, where I have tried it, it has not proven successful. We should differentiate between active diphtheria carriers, those who have actually had the disease, and passive carriers, those who have never had the disease, but whose noses, throats, or nasal sinuses carry the organisms and from which they may be transferred to others.

I wish to emphasize that I have seen children who, having had diphtheria four years ago and who after presenting negative cultures, have become passive carriers.

I was among the first in the Charity Hospital to use iodized phenol in the treatment of diphtheria carriers. My best results have been obtained by the application, three times a day, of a solution containing 60 drops of iodized phenol to one ounce of glycerin. This is to be applied freely on the tonsils and pharyngeal wall by the nurse or some trained assistant. We can repeat it with impunity as it induces no severe reaction. The pure iodized phenol applications

have been tried and discarded by me as being entirely too severe in reaction.

I have removed faucial and pharyngeal tonsils in passive carriers with no untoward results, but in the nasal carriers we are handicapped at the very start by the nasal accessory cavities. How are we going to reach the bacilli which must, in many cases, get into the sinuses? These cavities are inaccessible to applications of drugs, and surgical measures would not be justifiable. We, therefore, look to a perfected vaccin therapy in our future fight relative to the nasal carriers.

Dr. J. P. O'Kelley: My daughter was kept from Newcomb some time ago for 10 or 12 days on account of being a carrier. Cultures were made every other day. The last time, I made a culture in the morning and some one from the university made one in the afternoon; mine was examined by Dr. Bass and found positive, while the one taken in the afternoon was reported as negative. Of course I let it go at that and she was allowed to return to school. This illustrates the variability of positive and negative cultures. I would like to ask if there is any difference in the virulence of the two kinds of carriers, active and passive? I would also like to bring out discussion as to whether we should recommend the giving of antitoxin before we have a positive culture. In many cases of apparently follicular tonsilitis, we later find a positive culture; while on the other hand, cases we consider almost positively diphtheria return a negative culture. If I felt certain that the case was one of diphtheria, I would certainly give the antitoxin. I want to condemn the giving of antitoxin just as soon as the case is seen, unless the condition of the patient warrants it. With the improved methods at the disposal of the bacteriologist, a few hours delay does no harm. When we decide to give antitoxin, let the dose be large enough to destroy the trouble and let us not have to repeat the dose.

Dr. Arthur I. Weil: This subject is so wide and extensive, and there will doubtless be so large an amount of discussion, that I shall take but a few minutes in discussing the papers just read.

Of especial importance is the Schick test, by means of which we can separate the immune from the non-immune. In connection with this test an important feature is the toxin-antitoxin immunization method of Von Behring, by which the Schick positive cases can be immunized. By Von Behring's method we can confer an immunity which, although it develops slowly, not reaching its maximum until six months after the injection of the material, will last, according to the claims made for it, from two years to life. It has the added advantage of freedom from the dangers of anaphalaxis. This treatment, it seems to me, would be of especial value in immunizing inmates of institutions such as orphan asylums, schools, etc., because their period of immunization would outlast their residence in the institutions and if applied to all the non-immunes as deter-

mined by the Schick test would practically obviate the danger of an epidemic in such institutions.

The treatment of diphtheria carriers has been a difficult and unsatisfactory problem. The various sprays and applications of formalin, iodized-phenol, staphylococcus cultures, etc., are so numerous as to prove their lack of specific virtue. It is well known that diphtheria carriers are often nasal carriers and it is difficult to reach small niduses or the accessory nasal sinuses where the bacteria are often harbored. With the Coffin apparatus, medicated vapors may be injected into the nose and sinuses under pressure.

Of the cases which I have treated with vaccins quite a number were real carriers. Without any local treatment they were treated with stock diphtheria vaccins and later a diphtheria vaccin made from the most virulent of the carriers. They were given increasing doses of from forty to fifteen hundred million of the dead bacteria. The local reaction was slight. They all cleared up in from three to eight weeks after treatment was begun. How much of this result was due to the vaccins I cannot say. The value of the method, I believe, is still in doubt, but in view of its complete harmlessness and in the lack of a better method, I think it worthy of further trial.

In one later case I did a tonsillectomy instead of using vaccins. The surprising feature of this case was that after removal of the tonsils, scrapings and some of the expressed juice from deep in the tonsillar crypts gave a negative culture, though the throat had just before been positive. The throat promptly cleared up after the operation.

Dr. Allan Eustis: The question of control of diphtheria epidemics has been of especial interest to me ever since my association with an outbreak at Newcomb College, three years ago.

Until cultures were made from each inmate of the dormitories we were unable to control same. Two positive cultures were found in girls with "colds in the head," but with no other active symptoms, and as soon as they were segregated we had no further cases. I would strongly urge upon the general practitioner the necessity of taking cultures from each inmate of a home in which a case of diphtheria is seen. This is well exemplified in a family seen recently by me. One boy, sixteen years old, for whom I was called had a typical case of diphtheria, and cultures were made from the other members of the family. Positive cultures were obtained from his two sisters eighteen and twelve respectively, although at the time there were no evidences of any infection in their throats. The youngest child had been seen by Dr. Lynch the same afternoon. She at no time had more than a minute spot on one tonsil, but she was the last one to become negative, running positives for thirty-six days. We used injections of sensitized bacterins apparently with prompt relief. In closing I would ask Dr. Seeman to give us his opinion of the efficacy of fumigation in controlling diphtheria.

Dr. Love (in closing): There is little to add to the discussion. There has been one case at Tulane since the survey was made of Tulane and Newcomb colleges. This case lived in the same house with an accidental carrier which we had previously isolated.

Dr. Lynch (in closing): Text books tell us there are 20 varieties of pseudo-diphtheria organisms. Is it possible to differentiate these positively by microscopic and cultural tests?

In reply to Dr. Seeman, I would say, absolutely I use this then as a reply to Dr. O'Kelley's question relative to the administration of antitoxin in questionable cases. My own opinion is where the clinical evidence is reasonably positive, antitoxin should be given regardless of culture.

I would like to know if the laboratory has material for the Schick test.

Dr. Seeman: Yes.

Replying to Dr. Eustis: If anaphylaxis is developed after such small doses, is not the use of Von Behring's toxin antitoxin injection somewhat dangerous?

In England nasal diphtheria seems to be a very serious infection, while with us, it is quite moderate in fact; the remarks of Dr. Dupuy are self-evident of this fact. The Schick test is of value from the standpoint of the patient's immunity only, and not as a control against the community, for a negative Schick may be a positive carrier.

In reply to the question have cases of diphtheria been traced to carrier, I relate the history of a doctor's family where four cases of diphtheria developed from the carrier (the mother) who was isolated, and on securing a negative culture from her throat there has since developed no cases in the family.

Concerning the intravenous injection of antitoxin—it is given from the original package as received from the manufacturer, placing the syringe in water at body temperature.

In the cases of carriers, or those with retained organisms in the throat, where these are definitely determined to be in the tonsils, tonsillectomy has given a positive cure every time.

ACIDOSIS.*

By O. W. COSBY, M. D., Monroe, La.

It is common knowledge that the blood absorbs oxygen from the alveolar air and gives off carbon dioxide. This exchange of gases is uninfluenced by pressure from within or without, as has been proven by Howell and others, but is influenced entirely by an active principle secreted by the adrenals, which has been termed, adrenoxidase or adrenin.

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The severe and fatal symptoms of carbon-dioxide poisoning, cyanosis, dyspnea, convulsions, etc., that follow removal of the adrenals, is our best example of rapid death from sub-oxidation. The symptoms of disease of the adrenals, which are more or less gradual, are those chiefly evidencing a gradual destruction of the hemoglobin with the coloring matter deposited in the tissues, giving to the skin its bronzing, with general weakness, and other features of Addison's disease, which Brown-Sequard has so well demonstrated to be a disease of the adrenals. This is clearly a slow process of sub-oxidation.

Within the last few years the intimate association of the thyroid and pituitary with adrenal functions has been clearly demonstrated. A disease of these glands giving corresponding disturbance in adrenal functions vary in accordance with the disturbing factor.

Reasoning from the above we may clearly state that the adrenal glands, governed, or at least influenced, by the thyroid and pituitary, secrete into the blood something which lends to the hemoglobin its affinity for oxygen. This substance is called by Sajous adrenoxidase, by Crile adrenin.

Metabolism is the process by which tissues take up and utilize food, water and oxygen and throw off those complex and highly toxic compounds called nuclein bases, i. e., xanthin, hypoxanthin, amino and diamino acids; in other words, acid biproducts. These products, together with the products of digestion, find their way to the portal circulation, and are there oxidized and reduced to the simple and non toxic and easily eliminated urea, phosphates, chlorides, sulphates, creatin and creatinin. Now when these compounds are not oxidized properly, the organism is poisoned, more or less, according to the degree of suboxidation, and the resulting symptoms are in exact proportion to the amount of intoxication.

Taking the lobule as the unit of study in the liver, we find that the portal vein approaches the lobule by dividing into a plexus around and through it, ending in the efferent, or hepatic vein. Into this plexus empty the radicles of the hepatic artery. In this particular location the blood is brought in intimate contact with the liver cells and at this point we reach the sphere of specific liver function. The bile is formed; quite as important, those highly toxic substances aforementioned are

oxidized and converted into the harmless products mentioned heretofore. This last most important function is made possible by the presence and aid of adrenoxidase; this substance coming from the abdominal aorta through the hepatic artery, and finding its way into the portal radicles just before they enter the lobule.

This process of oxidation is impossible in the absence of either the adrenoxidase or the liver. We must then, regard the liver as our chief central laboratory in which the secretion plays such an important role, and in which this agent first meets and changes the toxic acid biproducts and tissue waste into harmless substances.

To group the aforementioned facts within a short space it is permissible to state that a condition may arise during the course of many diseases in which we have a disturbance largely located within the liver, influenced probably by improper or deficient function of the adrenals, which may be due solely to the adrenals; or reflexly from the influence of the thyroid and pituitary; this condition is one in which we have a distinct and easily proven suboxidation, together with a carbohydrate starvation; this condition is called Acidosis. It is not a disease, but a disorder, coming especially in diabetes, starvation, black water fever, mental or surgical shock, anesthesia, violent physical exertion, and infections, occasionally coming as the only disturbance demonstrable.

This disorder is characterized by severe depression; usually, but always, by severe vomiting, and deep sighing respiration, restlessness; deeply sunken eyes; a characteristic sweetish aromatic odor of the breath, similar to chloroform, which is due to acetone; in the urine we find diacetic acid and acetone; obstinate constipation; usually no fewer and often subnormal temperature, but occasionally the temperature may run high in the last hours. The group of symptoms aforementioned are rather typical of a severe case. As has been mentioned before, there are different degrees of intoxication, hence, different degrees in the symptomatology; death may ensue early, as in chloroform anesthesia. All cases of diabetes mellitus and hyperthyroidism, die of acidosis. It may become a chronic condition leading to cardiorenal disease (Dittman & Walker, *New York Medical Journal*).

Grouping the etiology and pathology into one sentence, I repeat acidosis is essentially a condition of suboxidation and carbohydrate starvation.

The treatment for this disorder is exceedingly simple and the results are uniformly constant and gratifying. Sodium bicarbonate to neutralize circulating acids and glucose to supply or stabilize the carbohydrates lost or at least to effect carbohydrate equilibrium. If the stomach is retentive, the soda and glucose may be given by mouth, and should be given freely. If glucose is not available gum drops, sugar or some form of candy may be given. Where the stomach is not retentive, soda and glucose may be given by proctoclysis (Murphy drip). If the case is desperate we may administer the soda and glucose intravenously, using one per cent of each; we may use as high as five per cent glucose with the soda; this last treatment gives prompt, rather marvelous, and entirely satisfactory results. All acids, by mouth should be prohibited during treatment; it is peculiar, that in cases where there is complete acid saturation, that the patient should have a strong desire for acids.

It is suggested here that the diagnosis of acidosis be made with discretion, certainly not neglecting a careful urinalysis, especially testing for acetone and diacetic acid. Once the diagnosis is made, this simple treatment gives very happy results.

THE CAUSES AND TREATMENT OF DYSPNEA IN CIRCULATORY DISEASE.

By J. T. HALSEY, M. D.,

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Dyspnea is one of the commonest and probably the most distressing of symptoms in circulatory disease. It is moreover not only a distressing symptom, but is in addition one, which, in its direct and indirect effects on the patient and on his heart, is most decidedly harmful. Leaving aside the consideration of the rather complicated matters of viscosity of the blood, the effect on the pulmonary circulation of distention of the lung, the influence of forced breathing on the filling of the heart and on the tone of the bronchi, dyspnea produces certain patent and readily comprehensible unfavorable effects on the circulation. Of these the most evident are the extra strain and stress put upon the heart by the distress and anxiety of the patient and by the often really excessive and exhausting physical work which the

rapid labored breathing entails. These, with the interference with quiet and sleep, often absolutely defeat all efforts to apply that most valuable therapeutic agent, rest for the heart, or any approximation thereto. Even so short a preamble has probably been unnecessary to establish the importance of improving our methods of efficiently relieving dyspnea. Here, as is so often the case, therapy will become more rational and correspondingly more efficient if it be recognized that dyspnea in these cases is not always due to the same immediate cause.

In the light of our present knowledge, at least four main causes of dyspnea may de differentiated. The first of these is essentially the insufficient flow of blood through the lungs and the rest of the body, with the resulting insufficient oxidation and incomplete removal of the CO_2 in the lungs and the too great loss of oxygen and excessive accumulation of CO_2 and other waste products in the systematic circulation. This type or cause of dyspnea has long been recognized and it may be conceded that the remedy therefor lies primarily in the improvement of the circulation by any means at our command. It is probable, too, that the therapy usually employed in these conditions is at least reasonably correct and efficient. These cases are usually cyanotic, and as a rule the lungs are more or less wet.

The presence of fluid in the pleural cavity as a cause of shortness of breath is recognized far better in theory than it is in practice. Little can be said in addition to what has been said so often on this phase of our subject, but I cannot refrain from once more expressing my firm conviction that this condition should be detected, and that, in a case of cardiac decompensation, the presence of hydrothorax is an indication for prompt aspiration, while its recurrence calls for repetition of the procedure. Other therapy is often successful only after the hydrothorax has been relieved.

Physicians all too often fail to realize that in cardiac cases the dyspnea is frequently in large part due to spasm of the bronchi or in other words to the same condition as is present in what we call bronchial asthma. The failure to recognize this has led to a neglect of those remedies which have been found so efficacious in asthma, and consequently treatment has frequently been unsuccessful. Bronchial spasm as the main or as a contributing cause of dyspnea in a cardiac case should be at least

suspected when auscultation reveals the presence of sibilant and sonorous rales and the prolonged, often sighing expiration so often heard in asthmatics. These patients may or may not be cyanotic. The confirmation of this interpretation of the dyspnea is furnished by the success which follows the administration of such remedies as have proved useful in asthma, such as morphin, best combined with atropin, adrenalin, used in the presence of a severe decompensation cautiously and tentatively, asthma cigarettes or pastilles, chloral (with caution) alone or combined with bromides and urethan, of which latter it is necessary to speak more at length. Urethan is a drug introduced in the late eighties as a hypnotic, which was tried and found wanting, chiefly because it was too feeble in its effects. About five years ago in the course of a pharmacological investigation H. Meyer found that urethan had a well developed power of preventing or overcoming spasm of the bronchi. On his recommendation the drug has been quite widely used to relieve or prevent bronchial asthma and with success. For several years past I have been using this drug both to prevent and to relieve these attacks in circulatory cases, and often with most satisfactory results. It appears to be remarkably free from any undesirable side actions, even when given in large doses. The dose according to text-books is ten grains, but I do not think it worth while to use it in asthma in doses of less than twenty grains, and if necessary I do not hesitate to increase the dose to forty grains. Its action as a mild hypnotic is more often an advantage than a disadvantage. It has a disagreeble taste and may be given in wafers, but it works more certainly and promptly if given in solution . Finally in considering the treatment of these asthmatic attacks in cardiac cases we should not forget the value of catharsis or the relationship in some patients between ingestion of certain articles of diet and asthmatic outbreaks. In more chronic cases the antiasthmatic action of iodides may be employed with advantage.

The recognition of a fourth cause of dyspnea in circulatory disease we owe to recent clinical investigations of the reaction of the blood and of the effects on the respiratory function of even slight changes therein. As a result of these studies it may be confidently affirmed that a diminution of the alkalinity of the blood is at times a chief cause of dyspnea. These patients

are not cyanosed (unless there be other causes for the dyspnea). They present, as the chief feature by which they may be recognized, a dyspnea which is out of proportion to the other evidences of the circulatory disease. Further confirmation of this diminished alkalinity of the blood will be furnished by the fact that as a rule in such cases it is necessary to give large amounts of alkalies before the urine becomes alkaline. In fact in certain cases I have not been able to secure this result, because the doses necessary to alkalinize the urine were so large as to upset the digestion or to cause diarrhea. Unfortunately too it has been my experience that all of these cases do not respond satisfactorily even when the urine does change its reaction. However in some patients the results have been soo good that I would urge you to try alkalies in appropriate cases. I am accustomed to start with five grains each of bicarbonate of soda and of the citrate and acetate of potash every hour. Probably the lack of success of this treatment in certain cases apparently of this type, is to be explained by the assumption that there are other causes of this dyspnea without cyanosis, which we do not yet appreciate or recognize.

In conclusion it must not be forgotten that, while on paper we can classify cases of dyspnea in the fashion outlined, in practice we are called upon to treat patients in whom two or more of these causes (and perhaps others at present unknown) are at work. If however we make an effort to size up the individual case and to find the main cause or causes of the dyspnea, and then inaugurate the treatment which seems most applicable, we will, I believe, meet with greater and more frequent success in the relief of this most distressing and harmful symptom.

CASES OF INTEREST — PNEUMOCOCCUS ARTHRITIS AND A VERY UNUSUAL TYPE OF BRONCHO-PNEUMONIA.

By A. L. LEVIN, M. D.,

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CASE I.—PNEUMOCOCCUS ARTHRITIS.

In presenting this case, I have in view several interesting points, namely: I. It is rather of rare occurrence. Herrick

collected only 52 cases in the literature. II. As a rule the pneumococci attack one or several joints after the invasions of the lungs, either shortly after the crisis in pneumonia, or as late as three weeks afterwards. In the case under consideration, there is no history of pneumonia. III. The probable cause of bringing the pneumococci into prominence in this case is very interesting and the circumstances were such as to probably involve a medico-legal question. The history of the case is as follows:

C. W. H., age 44, M., engineer by occupation, of good habits. F. H. F. and M. dead, one brother and two sisters living in good health. P. H. gonorrhea 20 years ago, diphtheria four years ago and typhoid three years prior to the onset of arthritis. Shortly before the development of arthritis the patient suffered from overflow of tears from left eye. Passing of a probe through the duct was practiced from time to time. That procedure would often result in a good deal of trauma to the part, hemorrhage, ecchymosis and tumefaction would develop. In the early part of January, 1914, the patient walked into my office in a crippled fashion, complaining of very severe pain in the right knee joint. He retired the evening of the 2st of January in perfect health, and at 3 a. m. January 22 he was awakened by a severe pain. He remembered that twelve hours previous to onset of pain he struck his knee slightly while climbing a ladder to inspect some work. Such knocks in the life of an engineer are almost of daily occurrence. On examination I found the knee joint uniformly swollen, a painful spot to the inside of the knee, no visible mark indicating trauma, no visible zone of inflammation; temp. 101, P. 104. Patient was put to bed, bowels opened by purgative, and the usual remedies for arthritis ordered. In the following few days there was not the slightest response to treatment; condition getting steadily worse, temp. reaching 103, pain more severe, a decided increase in the swelling of the knee joint, a marked inflammatory zone, edema below and above the knee joint, fluctuation could be distinctly felt. The presence of pus in the knee joint was almost certain, urine normal, leucocyte count 30,000. I called my friend, Dr. Hatch, in consultation, who decided to open the knee joint. He was admitted to the Touro Infirmary on January 28. Shortly after admission the knee was opened, a quantity of pus was liberated, joint was irrigated through and through and drainage tubes introduced. A specimen of tissue and pus was sent to the laboratory. Dr. Lanford reported: "acute inflammatory tissue and culture given morphologically pneumococci, pus pneumococci." January 30, condition worse, temp. higher, leucocyte count 50,450, P. N. 94, S. L. 4, L. L. 2. The swelling began to climb up very rapidly and reached the upper third of the thigh. The patient was desperately ill, in a state of septicemia and we

feared any minute a development of septic pneumonia. Prof. Rudolph Matas was called in consultation. His suggestion was to make free incisions all along the extremity, painting it afterwards with a 50% ichthyol, and soaking constantly in a hot solution of lead and opium. Eight incisions were made from the thigh downward and additional drainage tubes were introduced in the middle of the leg, where pus was also present. A characteristic feature of the pneumococci infection is the fact that it softens the tissue to such a degree that after the skin is cut through, one can easily separate the tissues with the tips of the fingers without resorting to instruments, because the tissues become very soft and spongy in character. Daily irrigations with a warm solution of 1% lysol were instituted. The plan worked splendidly in checking the onward movement of the enemy, but the infection started a most stubborn siege warfare of the extremity from the knee downward, which lasted six long months, constantly draining pus. During that time, the wounds closed up apparently on two occasions, but as soon as a plaster of paris cast would be put on to straighten the knee joint as much as possible, the latter would act as an irritant and pus would again make its appearance. On May 21, 1914, he was readmitted to the Touro Infirmary. An X-ray picture of the knee joint showed that the bone was not involved. To make it sure, the knee joint was opened up and broken and the bones thoroughly inspected, but no sign of involvement of the bones could be detected. Dressing of the joint in the usual manner was continued. At the end of 5½ months there were still several fistulas open draining pus. I had given him then several injections of Van Cott's combined bacterial vaccin. I doubt whether the vaccin had any influence in checking the infection, although my experience in that respect is very limited. At the end of a six months' battle the victory was finally complete. A cast was put on again, and to our regret this time it gave rise to an outbreak of erysipelas. The latter invader again gave me trouble for a few weeks. After his recovery from erysipelas, Dr. Hatch devised a special brace to straighten somewhat the joint, but mainly to act as a support. At present he does not need any support, he has even dispensed with his friend, the walking-cane; he is happier with his own crippled leg than he would be with an artificial one, especially since he is able to pursue the same occupation as before the illness. He is still suffering, though, from an overflow of tears from the left eye.

The question now arises in my mind, how did the pneumococci in this case reach the blood-stream? It is a well-known fact that the respiratory tract is the harboring place for the pneumococci, and that they are found in a small percentage in normal individuals. Wasn't then the probing of the tear duct responsible for their access to the blood and the slight trauma of the knee a mere coincidence? Surely the trauma could not have created

pneumococci in the knee joint in twelve hours. The medico-legal is now staring us in the face. If the probing is the causative factor, the employer is not responsible; on the other hand, if the trauma created the whole trouble, the employer is certainly responsible. In my poor judgment, it seems plausible that the pneumococci were introduced from the nose into the blood-stream by the probing, the trauma probably lowered the resisting power of that particular spot, and the pneumococci found immediately a favorable location for starting their mischievous work. If this be true, shouldn't it then teach us a lesson of caution in probing the nasal duct for overflow of tears?

CASE 2.—A PUZZLING CASE, PROBABLY AN UNUSUAL CASE OF BRONCHO-PNEUMONIA.

This case presents also some interesting features worthy of consideration. There was no positive diagnosis made. Patient is six years of age, parents and two younger sisters are in perfect health. P. H. Uusual diseases of childhood. The case first came under my observation on December 29, 1914. The following history was obtained:

At the end of the fifth week of an attack of pertussis the child suddenly developed high temperature, which lasted for 24 hours. Seven days later high temperature developed again and began to run an irregular course, rising to 103.5 in the evening, lasting a few hours and becoming normal for a few hours or days, to rise suddenly again to 103 or higher, sometimes in the early morning. No nausea, no vomiting, no pain and no cough.

Patient was admitted to Touro Infirmary on December 29, 1914. On my first examination soon after admission at 8 p. m., I found the child to be somewhat emaciated, anemic, temp. normal, pulse 108, respiration 35; physical examination of heart revealed a faint systolic blow, lungs negative; abdomen soft and no sensitiveness could be elicited on pressure, liver and spleen not palpable. At that moment the parent's dash with the child all the way from Grand Isle, a distance of eighty miles, to Touro Infirmary was not quite clear to me. Four hours later, temperature suddenly climbed up to 103.5, pulse 128, respiration 135. From that time on until January 7 the temperature suggested a septic focus somewheres. The accompanying chart will give you an idea about the temperature curve. You notice on two occasions a maximum temperature of 106 and a minimum temperature by rectum of 95. I called in consultation my friend, Dr. L. R. Debuys, who examined the child thoroughly and could find no definite cause for that remarkable temperature curve. Dr. A. I. Weil was called in to report on the

condition of the ear, nose and throat. He examined the child twice and reported absolutely negative as far as the ear, nose and throat were concerned. Repeated examinations of the lungs were negative. The heart, however, became louder and musical in character, area of cardiac dullness was normal. Laboratory findings: Repeated examinations of the urine voided, also catheter specimens were negative, blood count on December 30, total whites 29,000, lymph. 5% and polys 95%. On January 1, total whites, 22,400, N. 66, L. L. 6, S. L. 26, E. 2. Sputum for T. B. and Von Pirquet test negative. Blood cultures, reported by Dr. Lanford, first specimen, one plate showed streptococci. Thinking it was due to contamination of the skin, another blood culture was made with the utmost care against contamination. Staphylococcus on culture was the report by Dr. Lanford. Examination for plasmodia was negative. X-ray report—shadow at the base of the right lung, probably encysted empyema. A needle was introduced twice with negative results. Fortunately very little medicine was given. Antipyretics had no effect and urotropin still less. On January 7 temperature, pulse and respiration became normal and remained normal until January 12, when the child was discharged apparently well. The murmur, however, was still present. A fluoroscopic examination showed lungs clear. On January 23 the child left for home on a rainy and stormy day. Several days later she developed temperature again and began to cough. On January 31 she was brought to me again with temperature of 105. On examination I found both lungs filled with moist rales. Under proper treatment lungs cleared up rapidly and temperature subsided for a few days to recur again, although on examining the lungs they were found apparently clear. On observing the case closely I noticed that the high temperature would last a few hours, to be followed by a profuse perspiration. I examined the blood again for plasmodia, with negative results. I then thought of our old standard, quinin, as a therapeutic test. A trial of that remedy for three days brought down the temperature to normal and has never recurred since, although a week later she developed a spell of coughing for 24 hours with rales in the lungs, but no temperature. About five months ago the child came again under my observation looking robust and healthy, having gained in weight considerably. Examination of the heart still showed a faint systolic blow. On advice, her tonsils and adenoids were removed by Dr. A. I. Weil. At present the child is perfectly well. What is the probable diagnosis in this case? Broncho-pneumonia is very suggestive, though it is rather an unusual type. Why then should quinin control the temperature?

ABDOMINAL PAIN, ESPECIALLY WHEN ASSOCIATED WITH ABNORMAL TEMPERATURE, AN INDICATION FOR CAUTION IN THE USE OF PURGATIVES, WITH REPORT OF A FEW ILLUSTRATIVE CASES.*

By JOHN SMYTH, M. D., F. A. C. S.,

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It is not with the idea of bringing to you anything new or original that I submit this brief paper, but simply to remind you of a few points, the value of which we are all aware but which we too often overlook.

Pain, associated with fever, is, as we know, suggestive of inflammation. Hilton, in referring to the early period of man, says:

"Under injury, pain suggested the necessity of, and indeed compelled him to seek for rest. Every deviation from this necessary state of rest brought with it, through pain, the admonition that he was straying from the condition essential to restoration. He must have observed with astonishment, the breaking asunder of the newly formed tissue or the steady development into normal structure which occurred in exact acccordance with the disturbance or rest to the part which the sense of pain had enabled him to regulate so accurately and to employ so beneficially for his own personal relief and comfort."

We see constantly how essential is rest in fractures, joint diseases of inflammatory type, and in the repair of wounds, either infectious or non-infectious, and pain usually suggests to the victim rest in these as well as many other conditions before the advice of a physician is obtained.

From simple tracheotomy for the relief of certain laryngeal conditions to the more formidable ceco-sigmoidostomy for the relief or cure of rebellious colitis, we have as a leading principal and controlling factor—rest, physiological and mechanical rest.

A. J. Ochsner, in a review of one thousand consecutive cases of appendicitis (*Southern Medicine and Surgery*, Chattanooga, November, 1904) concludes that in the treatment of acute appendicitis, neither food nor carthartics should be given by mouth, that large enemas should never be given, that gastric lavage should be employed especially in cases suffering from nausea.

*Read by invitation before the East Feliciana Parish Medical Society, Clinton, La., April 5, 1916.

It is needless for me to comment upon this, as we all know the enormous reduction in the mortality since this treatment was adopted generally; the underlying principle of which is rest.

It is not always easy, in fact it is often exceedingly difficult, to differentiate the many abdominal conditions associated with pain and fever. Many times they are ushered in with pain in the region of the umbilicus. Deaver says that the location of the initial pain in the majority of cases of appendicitis is in the umbilical or peri-umbilical region, next in order of frequency, the epigastrium, and least commonly, the right iliac fossa.

The pain of appendicitis may, however, be referred to any region of the abdomen, depending upon the position of the appendix. It is, no doubt, a lack of appreciation of this fact that results in so many errors of diagnosis in acute abdominal affections. Deaver has further observed in many attacks of slight appendicitis in young people, and particularly in children, that there may be no pain, not even tenderness in the right iliac fossa.

The secondary or localized pain of appendicitis is largely due to a circumscribed peritonitis and is referred to the position that the appendix may occupy, or it may be referred in the direction that the appendix may assume relative to nerve distribution, as when the appendix rests on the psoas muscle and is in relation to the anterior crural nerve the pain may be referred to the thigh or to the knee.

The frequency of appendicitis being associated with gall-bladder trouble, as shown by Mayo, and its occurrence as a complication in many other abdominal conditions further complicates abdominal diagnosis, again it is so often obscured by or so closely simulates other conditions as acute indigestion, etc., that the possibility of its presence should never be forgotten.

Case 1.—Male, age 33, at about 9 p. m. was attacked suddenly with cramp in the abdomen. Usual domestic remedies were used, including hot water bag to the abdomen. Two tablespoonsful of castor oil were given the following morning. Condition grew gradually worse and a physician was called in the third day. Three grains of calomel were given in ½-grain doses every hour. Pluto water next morning. Patient complained of great pain in the abdomen until about 3 p. m., when the pain subsided and patient began to perspire freely and complained of great weakness. I saw this patient in consultation at 2 a. m., temperature 103 2-5, pulse

140-155, weak and irregular. I made a diagnosis of peritonitis following ruptured appendix, and as the patient was, in my opinion, dying, I advised against any surgical intervention. The end came at 5:40 a. m.

Case 2.—Female, age 35, while at dinner had sudden abdominal pain, followed by fever, following day chill, fever continuing. Four grains of calomel were given followed by pluto and oil. The next day patient had rigors with continuing temperature. I saw this patient on the evening of the fourth day, at about 8:30, bowels had not acted, the skin was cold and clammy and there was no perceptible radial pulse. Stethescope over heart showed 190 beats per minute. Abdomen was distended and tense, respiration rapid and shallow, rectal temperature 105. Intravenous infusion reduced the heart beat to about 180. Diagnosis was made of general peritonitis due to ruptured appendix. Incision through the right rectus under novocain was made. Abdomen was found full of milky fluid under considerable pressure. Appendix was ruptured, gangrenous, and bathed in foul pus. Drain tubes inserted. Respiration and pulse improved temporarily after relief from distention, but the patient succumbed to the profound septicemia a little before midnight.

Case 3.—Male, age 64. Carbuncle 4x6 inches on back, one week duration, pulse 140, temperature 103 2-5. Considerable improvement, when about three weeks later had vomiting spell, next day pain in the abdomen with marked epigastric distention, hot turpentine stupes applied and hot peppermint water by mouth. Following day distention slightly less, calomel was administered, followed by salts. The next day patient complained of pain on palpation in the region of the appendix. Temperature 102, pulse 120. Ice cap applied. Following morning patient complained of great weakness and was found later by his physician in collapse. I saw this patient for the first time in the operating room, where I was called hurriedly at about 2 p. m. The uselessness of any operation was apparent. However, being urged by relatives, a small abdominal incision was made, disclosing general septic peritonitis and ruptured appendix. Two large drainage tubes were inserted, patient died at 5 p. m.

Case 4.—Male, age 17. Attacked suddenly with "cramp colic" after a hearty meal. Given the usual home remedies, and on the third day castor oil. Patient grew rapidly worse and on the morning of the fourth day had chill, when the family physician was called in and the diagnosis of appendicitis was made. I saw this patient in consultation on the morning of the fifth day, his general condition was good, and, as McBurney expressed it, "it was too late for the early operation and too early for the late one." I advised continuation of the Ochsner treatment. On the morning of the ninth day, temperature having been normal for two days, under ether anesthesia, the appendix was removed. It was found perforated and surrounded by about 2 drams of foul pus, walled off

by very frail adhesions. Cigarette drain was placed at the lower end of the wound, removed within 48 hours, patient made an uneventful recovery.

As Craig and Speese have said, the subject of appendicitis has received so much attention that one hesitates to offer any comment on the recent literature, yet Murphy in his Clinics 1915, IV, No. 3, says: "It is just the time to begin talking of appendicitis, and talking most seriously and emphatically." He was amazed to find that the mortality rate in the combined statistics of a number of hospitals was a little over 10%.

This frightful rate is considered due not to any fault in the technic on the part of the surgeon, but to the fact that the patients did not reach the hospital in time for successful operation. Murphy thinks that procrastination was the cause of death. I believe that the treatment of these cases prior to their admission to the hospital plays a very large part in the subsequent mortality. The cases that are operated early are spared the unfortunately too common treatment of purging and waiting. Yet, from my own experience, and from the observation of that of others, I am confident that many cases may be tided over what we considered the dangerous period and carried to the cold stage, where operation is safe and convalescence rapid.

In all abdominal conditions associated with pain the question of previous history of constipation should be carefully considered. The importance of this is appreciated when we remember that constipation is a prominent symptom of appendicitis, and that we seldom see a case of appendicitis at its beginning.

"Eulenberg, 1890, published the results of his research into the pathohistology of appendicitis, which clearly revealed that appendicitis is essentially a subacute or chronic inflammatory disease, that it commonly has a subacute beginning without obstructive clinical symptoms, and that the acute symptoms manifesting it clinically are but a critical phase of a long-standing disease. In the years that have since gone by but little has been added to this conception of the disease, and nothing to contrafute it. Although but few men have given his statement its commensurate consideration." (Pnatzer.)

Waller and Cole, in their clinical and roentgenological studies of the appendix, feel justified in assuming that the initial lesion of appendicitis is one of infancy and early childhood and that

many of the ills common to this age are but manifestations of this process.

In gall-stones, purgatives induce exhaustion and do no good; in gastric and duodenal ulcers, they encourage vomiting, distress the victim, and increase the danger of perforation; in intestinal obstruction from ileus or intussusception, they induce overdistention, and where the obstruction is low, increase the toxemia and encourage a fatal termination.

In appendicitis and "typhlitis" (Obal) they prevent rest, interfere with local protective and reparative efforts, increase the destructive process, and invite rupture with all of its dangers. Further, owing to the frequency of pyrolospasm, and pyloric and intestinal obstruction in infancy and childhood, the use of purgatives in these little ones is especially hazardous where pain and fever and constipation are common and prominent symptoms.

Conclusions:

1. The use of purgatives in obscure abdominal conditions should be avoided.

2. They should never be given when abdominal pain is present, until such conditions as appendicitis, ileus, intussusception, and ulcers have been excluded.

3. Abdominal pain with constipation and fever is so frequently the result of appendicitis that the probability of its presence should never be overlooked.

4. Purgation is not only contra-indicated, but unquestionably dangerous in acute appendicitis, except possibly at its immediate onset (Sonnenburg) and is directly opposed to the modern treatment.

5. If we realize that the average patient may live for a while without nourishment, even nutrient enema may be withheld from 18 to 48 hours, all food by mouth should be prohibited, and even water, especially in cases of nausea. Mouth washes, however, should be used freely, saline or glucose or plain water enema or Murphy drip, being given to quench the thirst, ice-cap to the abdomen, absolute rest in bed, and Fowler position maintained and purgatives avoided until a definite diagnosis can be made and appropriate treatment instituted.

I believe if this plan of caution was adopted in all obscure abdominal conditions where pain, constipation, and fever are symptoms, many lives would be saved and such cases, as I have briefly reported to you, would rarely occur.

N. O. Medical and Surgical Journal

Editorial Department.

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THE MEETING OF THE STATE MEDICAL SOCIETY.

The thirty-seventh annual meeting of the Louisiana State Medical Society was held in New Orleans during the week of April 24 to 29, and included the scientific sessions, clinics, lectures and social functions. There were 136 members registered from the country parishes and 227 from the Parish of Orleans.

The Touro Infirmary and the Hotel Dieu were hosts at luncheons on two days of the meeting and the medical schools of Tulane gave a buffet lunch on the third day of the regular meeting at the Hutchinson Memorial of the Medical College, at which building all of the general sessions were held.

The meeting closd Saturday night, April 29, with an entertainment at the Orpheum Theater followed by a supper at one of the restaurants.

President J. C. Willis, of Shreveport, presided at most of the sessions, at which sections on all branches of medicine and surgery were held, and in which an unusually high standard of papers was presented. The House of Delegates met frequently during the session of the Society and seemed to have been quite busy.

The officers for the coming year are noticed elsewhere but some special notice of the new president is called for here.

Dr. W. H. Seeman, of New Orleans, has been quite active in the affairs of the Society for several years and his selection for the presidency has been deserved. Aside from his interest in medical organization, Dr. Seeman has for some time been at the head of the bacteriological departments of the City and State Boards of Health and was especially identified with the excellent achievements in the plague situation. Dr. Seemann was for a number of years in charge of the clinical laboratory of the New Orleans Polyclinic and has been connected with the Tulane School of Hygiene and Tropical Medicine since its inception, and he has been Dean of this school since 1914.

The office comes to Dr. Seemann as a recognition of his service in State medicine and we feel assured that the coming year under his administration will mark an advance in the progress of the Society.

The 1917 meeting place will be Alexandria, where many will recollect a former successful meeting was held.

Altogether the meeting was eminently successful and much of the credit must be allotted to the Committee of Arrangements and the Committee on Clinics, who, for the first time, made this part of the program both interesting and effective.

THE MISSISSIPPI STATE MEDICAL ASSOCIATION.

The forty-ninth annual session was held on the banks of the Mississippi at Greenville, on May 9, 10 and 11, 1916, the House of Delegates convening first on May 8, under the presidency of Dr. I. W. Cooper, of Newton.

The meeting was highly successful, with an attendance of about three hundred including most of the best-known men of the State itself and visitors from New Orleans, Memphis, Birmingham, Detroit, and Knoxville.

Sessions were held at the Elysian Club, a few doors from the principal hotel of Greenville, Hotel Cowan, which made it very convenient for the majority of those in attendance. The club building is handsome and served the purpose quite satisfactorily.

The business sessions were interesting in so far as they showed a good financial situation for the society and a satisfactory membership list, but the secretary reported several counties either unorganized or not reporting.

An appropriation was made for a loving cup to Dr. Carroll Kendrick. A committee was appointed to confer with the attorney general as to the limitation of the activities of druggists. The secretary was instructed to notify the *Pan-American Surgical and Medical Journal* that their relationship would be discontinued from date.

The officers for the coming year were all elected upon the recommendation of the nominating committee and unanimously as follows: President, T. M. Dye, of Clarksdale, former councillor from the first district; vice-presidents, T. W. Reagan, of Union; R. C. Smith, of Dwiggins; R. A. Strong, of Pass Christian; Councillor for fifth district, S. J. Hooper, Kosciusko; for sixth district, S. W. Johnson, Vicksburg, and for first district to replace Dr. Dye, L. L. Minor, of Hollywood; delegate to the A. M. A., I. W. Cooper, of Newton. The popular and active secretary, E. F. Howard, of Vicksburg, holds over as well as the efficient treasurer, J. M. Buchanan, of Meridian.

The scientific program was divided into seven sections, each of which presented at least several papers of unusual value and many of which were above the average. Unfortunately, their number was rather large, over eighty papers being listed in addition to the opening exercises and the addresses on the evening of the public session. Had it not been that there were, as usual, a number of absentees and that several, through courtesy for their guests, asked to read their articles by title, the program could not have been finished on

time. As it was, the lack of time precluded the possibility of adequate discussion in some of the sections. The discussions held, however, were valuable and, in some instances, as interesting as the papers introducing them, notably that on malaria on the medical side and that on gall-bladder operations on the surgical.

The entire session was harmonious and characterized by good fellowship. All those present seemed glad to be there and were planning to be at the next session, which is to be held at Jackson

Dr. L. R. DeBuys attended as fraternal delegate from the Louisiana State Medical Society; the annual oration was delivered by Dr. E. D. Martin and New Orleans was otherwise represented by Drs. Drs. Bel, Bass, Chassaignac, Halsey and Lanford.

THE TULANE COLLEGE OF MEDICINE.

New Orleans has always been a medical center, because of its metropolitan relation to contiguous territory and because of its provisions for the hospital care of a large population moving from many contributing states.

The early economic demand for physicians in the United States compelled centers of supply and New Orleans among the other large cities in the United States afforded the hospital facilities for instruction without which physicians could not be adequately trained.

So, as the New Orleans Charity Hospital began operating in 1832, in 1834 the College of Medicine started and the two have continued ever since, each contributing in its own field to the health of the State of Louisiana and to those states contiguous. It was not until 1847 that the State of Louisiana recognized the institution of a Medical College, although similar schools had been in operation for many years in more Northern States. In becoming the University of Louisiana, together with an embryo Law School and a projected College of Arts and Sciences, in 1847, the Medical College really began a fixed career which has always kept in advance of the rank and file of similar schools in America. Whenever new ideas in medical progress have appeared, the Medical College in New Orleans has either reflected

that progress promptly, or has taken the lead in its elucidation. The whole modern idea of insect borne disease came from this locality, and more modernly the latest word in hookworm, malaria, beri beri, leprosy and pellagra have come from the scientific research of the various members of the Faculty of the College of Medicine of the University of Louisiana, now called Tulane. Every national scientific medical body of any importance is locally represented by members of the teaching staff in Tulane, and, on many of such bodies, the local men have often served as executive heads.

Within the past ten years ideas in medical education have been revolutionized and to-day a more rigid requirement is made of the intending doctor—from the beginning of his high school work until he is licensed to practice medicine. Not only has Tulane met these requirements, but so well that the School of Medicine is one of those in the highest class as listed by the national bodies determining college standing. More than this the equipment in teaching, facilities, and in accomplishment, appertaining to the degree in Medicine from Tulane University, has altogether obtained the hallmark of the Royal College of Physicians and Surgeons in Great Britain, making Tulane one among a few American Colleges recognized as eligible for the degrees of the Royal Colleges.

With the growth of the College of Medicine, the School of Pharmacy at Tulane has been a continuous associate, filling a place among Southern universities, in which a scientific education is offered together with a practical training in a responsible calling.

Since 1888 port-graduate teaching has been carried on in New Orleans, by the New Orleans Polyclinic, which since 1906 has been an integral part of the University and what is now one of the Schools in the College of Medicine. Tulane was the first University in this country to recognize the importance of associating a clinical school for physicians with college work. To-day the practitioner of medicine can get any part of graduate medical work at Tulane, clinical, operative, review, or research in the laboratories and all under University direction.

The School of Dentistry in the College of Medicine enjoys the advantages of thorough university application, through which for the first two years classes are taught in the laboratories with

students of medicine and are thoroughly drilled in the Sciences. Additional technical laboratories are provided and an excellent clinic with large attendance.

In 1911, for the first time on the American Continent, a School of Tropical Medicine was inaugurated as a department of the College of Medicine, later, in 1913, becoming a separate integral part of the College of Medicine and expanding in the School of Hygiene and Tropical Medicine including Preventive Medicine. Not only were special laboratories created for the school, but a great organization for public service was inaugurated, in which not only the physician would be chiefly concerned, but the school teacher, the student body of the University, the sanitarian, the engineer, the trained nurse and the citizen. Now the health official of the South may be properly trained, the physicians in the Tropics may come for laboratory equipment and technic, and meantime the student in regular courses is given thorough instruction in these newer fields of medicine.

The laboratories of the College of Medicine have engaged in the investigation of problems of economic importance and as the years go by the new fields of preventive medicine will be more and more engaged in the altruistic work of a body of scientists aiming at the reduction of the death rate and the healthfulness of the community.

The Tulane College of Medicine is not sufficiently endowed to do the work laid out for it. It must compete with institutions either supported by the State or by a liberal philanthropy. Nevertheless the standards of education are as high as any in the United States, and the faculties mean to keep the standards high.

Degrees are offered in Medicine, Dentistry, Pharmacy, Public Health, Tropical Medicine and certificates and diplomas are awarded for satisfactory attendance. Nearly 5,000 men and women have been graduated from the several schools in the Colleeg of Medicine and around the orginal undertaking in 1834 have gradually congregated the various other colleges which now make up the great Tulane University of Louisiana.

There are still several generations of medical men in the Southern States and in Louisiana especially who were trained at the Medical School of Tulane and we are sure that the present standing of their alma mater is one of assured pride. It is becoming, then, that that interest should not rest in a mere content

but that each and every loyal graduate of Tulane should see to it that her traditions are preserved, especially when it is considered that the years which have gone by and those which are passing have in nowise detracted from the endeavors of the active teachers in Tulane to keep the standards high in all respects and that no unbecoming nor defamatory and scurrilous attacks can ever touch her honor.

Medical News Items

The Southern Sociological Congress met in convention in New Orleans, April 13 to 15, with about 2,000 delegates present. The following physicians were elected to office: Dr. Oscar Dowling, New Orleans, first vice president, and Dr. Edward H. Carey, Dallas, Texas, member of the executive committee. Dr. Wm. A. Evans, Chicago, and Carrie Weaver Smith, Gainesville, Texas, secretary of the Section on Health. A donation of 700 acres of North Carolina land, about 30 miles from Asheville, was made by Mrs. D. B. Stafford, of Hot Springs, N. C., who was in atendance at the Congress. This land is to be used by the organization in fighting tuberculosis. A gift of several thousand dollars was made also to start a fund to be raised for the erection of suitable buildings for a sanatorium. It was announced that $200,000 had been pleged for sanatorium buildings and will be available as soon as the administration building has been erected.

Examinations for Medical Intern and Assistant Epidemiologist.—The United States Civil Service Commission will hold an open competitive examination for medical intern, for both men and women, on June 7, 1916, in the prominent cities of every State in the Union. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position in the Government Hospital for the Insane, Washington, D. C., at $900 per annum, with maintenance. The positions are tenable for one year. Applicants must be graduates of reputable medical colleges, or senior students of such, with the expectation of graduation within six months from date of examination, and must be 20 years of age, or over, on the date of the examination. Persons desiring this examination should apply for Form 1,312,

stating the title for which the form is desired, to the United States Civil Service Commission, Washington, D. C.

An open competitive examination will also be held by the Commission for *assistant epidemiologist,* for men only, on June 6, 1916. The salaries range from $2,000 to $2,500 per annum. The duties of this position will be to make epidemiologic and sanitary surveys to determine the prevalence and causation of disease, to conduct laboratory studies in relation thereto, and to recommend measures to prevent and control outbreaks of disease. Applicants must have reached their twenty-third but not their fortieth year on the date of the examination. Persons desiring this examination should apply for Form 304, stating the title of the examintion desired, to the United States Civil Service Commission, Washington, D. C.

Little Damage to Abbott Laboratories.—A communication from the Abbott Laboratories announces that contrary to the grossly exaggerated report of the newspapers, there was very little damage sustained by the laboratories. The newspaper report that the firm had been engaged in the manufacture of ammunition or explosives is also denied.

Mosquito Campaigns.—New Orleans is not the only city in which mosquito campaigns are being waged for the extermination of these pests. New York, Jersey City, Philadelphia and Baltimore are actively at work in similar campaigns. Householders are co-operating with boards of healths in these cities in removing breeding places, and bulletins outlining the necessity for fighting the mosquito are being sent into the homes. With a thorough warfare on the mosquito, it is hoped to soon rid these cities of the pestilential insects, and show the way to other cities so worried of doing likewise.

Relief Fund for the Belgian Profession.—The report of the treasurer, Dr. F. F. Simpson, of the committee of American physicians for the aid of the Belgian profession, shows, for the month of April, 1916, a total disbursement of $7,310.04, and a balance on hand of $631.82. Total receipts previously reported are $7,941.86. No contributions since February 5, 1916.

The American Association of Anesthestists will hold its fourth annual meeting at Hotel Tuller, Detroit, June 12, under the presidency of Dr. Willis D. Gatch, Indianapolis. The subject

of the president's address will be "Instruction of Medical Students and Hospital Interns in Anesthesia."

The American Proctologic Society will hold its eighteenth annual meeting at Detroit, Michigan, June 12 and 13, 1916, with headquarters and place of meeting at the Hotel Statler. The profession is cordially invited to attend all meetings.

Academy of Medicine Meeting.—The forty-first annual meeting of the American Academy of Medicine will be held at the Hotel Statler, Detroit, June 9-12, under the presidency of Dr. Woods Hutchinson, New York. "The Relation of Legislation to the Practice of Medicine" and "The Relation of the Science of Medicine to Legislative Enactment" are the two principal topics to be considered. On Sunday after the seventh annual conference on Western medicine in Eastern lands will be held at the First Presbyterian Church, Dr. L. Duncan Bulkley, of New York, presiding over this conference.

Red Cross Prizes.—Various prizes for achievement in connection with the campaign to enroll one million members will be given by the American Red Cross on December 1. A gold medal will be awarded by Miss Lusita Leland, of New York, to the person who secures the greatest number of members for the Red Cross by December 1; five silver medals, offered by Mrs. W. Murray Crane, Dalton, Mass., for the same work by the same date; and a silver medal, offered by Miss Mabel T. Boardman, of the executive committeee, to the community which has the largest number of members per capita, and another silver medal to the chapter of the American Red Cross which can show the largest Red Cross membership increase per capita of the population of the community.

Plastic Surgery of the Face.—Due to trench war an unusual proportion of injuries of the face has occurred, and in order to meet the demands for treatment in this line a committee has been formed to solicit subscriptions of $20,000 to establish a hospital of 100 beds. Dr. Hebert L. Wheeler, New York, is chairman of the committee, and it is eventually the hope of this committee to equip a hospital with 500 beds.

Gifts to Tulane University of Louisiana.—The Board of Administrators of Tulane University, at its last regular monthly meeting, announced that two large contributions had been given the university, one for $10,700, while the second was for $500. The larger gift was made by certain members of the Board of Ad-

ministrators, whose names were requested to be withheld. The smaller gift was from the Quarante Club, a literary club of a score of years' standing, to the School of Technology. No particular object was in view when the larger gift was presented other than it be used for university purposes.

Insurance Act Causes Fatal Blunder.—A pharmacist of London, who in dispensing mistook strychnin for butylchloral hydrate, caused the deaths of two women. It was brought out at the coroner's inquest that this extraordinary mistake was due to nerve strain from overwork in dispensing an enormous number of prescriptions under the insurance act.

Appointments to Charity Hospital and Touro Infirmary Internships.—The following are the successful candidates from Tulane University for the internships in the Charity Hospital and Touro Infirmary:

Charity Hospital: H. E. Miller, J. B. Ferran, Jr., W. F. Krone, L. A. Hebert, W. T. Martin, C. E. Jarratt, H. S. Rosenthal, L. Z. Kusher, H. B. Burdeshaw, E. J. Beranger, W. L. Bendel, J. G. Pratt, W. P. Bordelon, A. C. Jackson, W. J. McLean and R. J. Mailhes. Pathological Department: Messrs. R. J. Mailhes and G. M. Jones all of Tulane. Messrs. Yeakel and Terrell, from Northwestern University were also appointed.

Touro Infirmary J. H. Park, Jr., B. R. Heninger, E. R. Bowie, C. C. Randall, E. F. Naef. To the Pathological Department: U. W. Giles.

Messrs. E. M. Levy, A. F. Hebert and S. D. Weaver were appointed to Touro Infirmary without examination upon recommendation of the Faculty of the School of Medicine of Tulane for meritorious work.

Mr. F. Willy, of Rush Medical School, Chicago, was also appointed.

Women Live Longest.—In a report recently issued by Director Samuel Rogers, of the Census Bureau, women live on an average three years longer than men. Native-born white American men may expect to live 50.6 years and women 54.2. In the colored race the difference is even greater, 34.1 being the average for colored men and 37.7 in favor of women. This brings the average for the population of the colored race down to 49.9 for males and 53.2 for females. Part of the difference in the expectation of life for men and women is due to the greater number of violent

deaths among men, although this difference only accounts in a very small measure for the greater longevity of women. Girl babies have a better chance for life during each of the first twelve months than the boys. The girls have a better chance to live not only in the first year, but every year up to the age of 94. Country bred women live longer than women of the cities, though the difference is not as pronounced as in the case of men. The death-rate in cities under 8,000 for 1909 and under 10,000 for 1910 and 1911 was 10,326 per 100,000, or twenty-three per cent less than in the larger cities.

The Mary Putnam Jacobi Fellowship for post-graduate study offered by the Woman's Medical Association of New York City has been awarded to Dr. Mildred Clark, a graduate from Johns Hopkins in 1914.

Corinne Casanas Free Clinic.—The laying of the corner-stone of the Corinne Casanas free clinic for the poor, of the Presbyterian Hospital in New Orleans, took place on May 5, 1916. The building in project is a memorial to Miss Corinne Casanas, who bequeathed her entire estate, amounting to $20,000, for the purpose of building a free clinic for the poor in conjunction with the Presbyterian Hospital. The building will be a fireproof, two-story structure, and will cost $40,000 when completed and furnished. The first floor of the building will serve as a modern, free clinic for the poor, equipped with the latest and best appliances and conveniences that science can afford. The second floor will be used, for the present, as a nurses' home for the women who are in training at the hospital.

Health Improvement in New Orleans.—In a report recently issued by the president of the New Orleans City Board of Health, the mortality statistics for April shows a reduction of 33 per cent in comparison with March, which also showed a reduction, and nearly 50 per cent as compared with April, 1915. Deaths from tuberculosis showed a remarkable decline in April of this year, being but 79, as compared with 107 for March. The deaths from all causes showed 98 less recorded in April of this year than in March, and 122 less than in April a year ago. Referring to malaria, in New Orleans, the report shows that of eight Southern cities from 1904 to 1913, New Orleans had less malaria than any except Galveston and during one year had less than Galveston or any other place. The city health officer takes the opportunity to warn all persons employing colored help to require that they be vaccinated as a protection against smallpox.

Louisiana State Medical Society Meeting.—The annual of the Louiiana State Medical Society was held in New Orleans, April 25-29, with possibly one of the largest attendance in its history. The convention opened with Dr. J. C. Willis, of Shreveport, the retiring president, and secretary-treasurer, Dr. L. R. DeBuys, of New Orleans, on the rostrum. A large variety of papers in medicine and surgery were read and interesting discussions were held. The officers elected for the ensuing year are: Dr. W. H. Seemann, of New Orleans, president; Dr. T. S. Jones, Baton Rouge, first vice-president; Dr. C. V. Unsworth, New Orleans, second vice-president; Dr. T. M. Bodenheimer, Shreveport, third vice-president; Dr. L. R. DeBuys, New Orleans, secretary-treasurer.

Councilors—First congressional district, Dr. W. H. Knolle, New Orleans; second congressional district, Dr. Homer Dupuy, New Orleans; third congressional district, Dr. B. W. Smith, Franklin; fourth congressional district, Dr. J. E. Knighton, Shreveport; fifth congressional district, Dr. C. P. Gray, Monroe; sixth congressional district, Dr. J. J. Robert, Baton Rouge; seventh congressional district, Dr. E. M. Ellis, Crowley; eighth congressional district, Dr. E. Lee Henry, Lecompte.

Committee on Scientific Work—Dr. L. R. DeBuys, chairman; Drs. Paul Gelpi and E. W. Mahler, New Orleans.

Committee on Public Policy and Legislation—Drs. J. B. Vaughan, Collinston; M. W. Swords and Geo. S. Bel, New Orleans; Dr. W. H. Seemann, ex officio; Dr. L. R. DeBuys, ex officio.

Publication Committee—Dr. L. R. DeBuys, New Orleans, chairman; Drs. W. J. Durel, New Orleans, and J. B. Vaughan, Collinston.

Committee on Budget and Finance—Drs. Homer Dupuy, W. H. Knolle, E. L. Leckert, C. V. Unsworth and B. A. Ledbetter.

Committee on Memorial—Drs. J. M. Bodenheimer, Leon J. Menville, J. T. Nix, J. E. Knighton and F. R. Gomila.

Committee on Medical Defense—Dr. L. R. DeBuys, chairman; Drs. J. P. O'Hara and J. E. Knighton.

Committee on Health and Public Instruction— Drs. G. Farrar Patton, J. Geo. Dempsey and B. A. Ledbetter, New Orleans.

Committee on Cancer Research—Drs. C. Jeff Miller and Isadore Dyer, New Orleans, and W. D. Roussel, Patterson.

Committee on Hospitals—Drs. Isadore Dyer, E. L. Leckert and J. P. O'Kelley, New Orleans.

Names To Be Presented to the Governor, From Which to Select One as Member of the Board of Medical Examiners—Dr. E. L. Leckert, Dr. J. A. Henderson.

Delegate to the American Medical Association—Dr. W. H. Seemann.

The next annual meeting will be held in Alexandria.

Life Insurance Course in Medical Colleges—At a meeting of the medical section of the American Life Convention held in Birmingham March 2, 1916, the folowing resolutions were adopted:

"*Resolved*, That it is the belief of the members of the medical section of the American Life Convention that a brief, practical course in life insurance should be added to the curricula of medical colleges:

"*Resolved, Further*, That a copy of this resolution be transmitted to each of the medical colleges for their consideration and action."

The Tulane School of Medicine has been given such courses for the past five years.

Louisiana State Board of Medical Examiners—The next examination of the Louisiana State Board of Medical Examiners will be held at Tulane University, 1551 Canal Street, New Orleans, June 8, 9, 10, 1916. The undergraduates will be examined on June 8 on the primary branches.

Leprosarium Bill Passes House—The House of Representatives on May 5 passed the bill providing for the care and treatment of persons afflicted with leprosy and preventing the spread of leprosy in the United States by the establishment of a national lepers' home. The bill, which has been favorably reported by the Senate committee on public health and national quarantine, is now on the Senate Calendar.

First Hay Fever Ordinance—New Orleans has the distinction of being the first city in America to enact a hay fever ordinance. The ordinance was passed by the New Orleans Commission Council through the joint efforts of the American Hay Fever Prevention Association, the City Board of Health, and the Department of Public Works. It is said that about 2 per

cent. of the population in many sections of the United States are afflicted with hay fever.

Congress of Physicians and Surgeons—The annual meeting of the Congress of Physicians and Surgeons was held on May 8, 9 and 10 in Washington, D. C. Much favorable comment was occasioned at the large number in attendance from the Tulane College of Medicine, most of whom addressed the congress. The New Orleans delegation consisted of Drs. J. D. Weis, I. I. Lemann, J. B. Elliott, Jr., S. K. Simon, W. W. Butterworth, H. D. Bruns, F. W. Parham, R. C. Lynch, J. B. Guthrie, W. H. Seemann, C. C. Bass, Ralph Hopkins, C. Jeff Miller, M. J. B. Couret, M. S. Souchon and Isadore Dyer. Dr. Seemann was elected to membership in the American Society of Tropical Medicine. Dr. Bass was made a member of the Society of American Physicians and Dr. Miller was made a member of the American Gynecological Association.

Personals—Dr. W. S. Elkin, dean of the Atlanta College of Medicine, and Dr. S. R. Roberts, professor of medicine, were in New Orleans on a brief visit of inspection of the equipment of Tulane University during the past month, as a part of the consideration of the new buildings of the Atlanta Medical College.

Dr. Chas. Chassaignac, dean of the Graduate School of Medicine, Tulane University of Louisiana, and Dr. J. T. Halsey, of the Tulane School of Medicine, attended the meeting of the Mississippi State Medical Association in Greenville and read papers before that body.

Among the doctors from New Orleans who attended the meeting of the Texas State Medical Association in Galveston were: Drs. W. D. Phillips, John Smyth, S. M. D. Clark, Amedee Granger, and E. A. Robin.

Dr. Isadore Dyer lectured before the St. Louis (Missouri) Medical Society on May 13 and was elected an honorary member of that body.

At the last meeting of the Texas Roentgen Society, held at Galveston, May 8, Dr. Amedee Granger, assistant professor of radiology, Tulane School of Medicine, was elected to honorary membership.

Removals—Dr. C. B. Alexander, from Alhambra, to Downey, Cal.

Dr. J. W. Watson, from Brittany, to Baton Rouge, La.

Book Reviews and Notices

A Treatise on the Principles and Practice of Medicine, by Arthur R. Edwards, A. M., M. D., 3rd Edition, 1020 pp, 80 Engravings and 28 plates. Lea & Febiger, Philadelphia, 1916.

Edwards' text book is well balanced and modern. It is concise even to the point at times of making the sentences epigrammatic, and yet no impression of abruptness or choppiness is given. One feels the author's constant desire to pack into his paragraphs as much information as possible at the expense of fluency and style. The field of medicine is so vast that if the attempt is made to be successful to set forth adequately within the limits of a single volume what the student may reasonably be expected to know, the author must necessarily cultivate succinctness. Edwards has succeeded well in this as well as in giving a sufficiently decided personal flavor by the expression of his views so that his book is no mere compendium, but readable and enjoyable. It will serve well as a basis for a quiz course, and as a handy reference volume. Special mention and commendation should be made of the satisfactory discussion of therapy, which has not been crowded into the background by the description of pathology and symptomatology. One notes here and there, of course, as in any volume of this scope, the retention of old views which have recently been vigorously attacked and disproven. Such for example is the great praise awarded strychnin as a vasomotor tonic in the routine treatment of pneumonia (p. 76). The work of Newbergh and others has pretty well shown the futility of strychnin in acute infectious diseases. We note, too, with some surprise, the author's vigorous opposition to the intravenous use of salvarsan and his recommendation that if used at all it should be given intramuscularly (p. 229). A curious statement is that in diabetes "the blood sugar rises to 0.1, to 1.6 per cent," (p. 727). The first limit named is not above nor even up to high normal; the latter is very evidently a misprint. Even when corrected to read 0.16 it would still be open to the objection that it understates the limits to which the hyperglykemia may rise. In a book bearing the imprint 1916 we might have expected some reference to the fasting method of treating diabetes. ISAAC IVAN LEMANN.

Principles and Practice of Physical Diagnosis, by John C. DaCosta, Jr., M. D. Third Edition, thoroughly revised. Octavo of 589 pages with 342 original illustrations. W. B. Saunders Co., Philadelphia and London.

Increasing familiarity with the new edition of DaCosta brings increasing admiration for it. It is the product of one who has put into it the ripe experience of observation and teaching. The text book not only presents all that is newest and best substantiated, but it brings all of this in conformity and correlation with the findings

of the classic authorities on physical diagnosis. There has been no striving after radical rearrangements in classification, no adoption of confusing terminology. The teachings and nomenclature of Laennec, Auenbruegger and Skoda are largely adhered to, and when they are departed from the correlating between new and old leaves no confusion. The numerous references to the original sources gives the student a historical perception of the development of the art and stimulates the more advanced to a study of those sources. The illustrations have been well chosen and are more than usually helpful.

LEMANN.

Starvation (Allen) Treatment of Diabetes With a Series of Graduated Diets, Hill and Eckman. Second Edition. W. M. Leonard, Boston, 1916.

The first edition of this booklet was reviewed in these columns a few months ago. The new edition contains considerable additional matter, which decidedly adds to its value. It will undoubtedly be of assistance to one trying to learn how to carry out the much discussed and undoubtedly very valuable Allen treatment. In the reviewer's opinion this book still lacks one very essential thing, namely a good, but not necessarily long discussion, or resume of the underlying principles of this treatment, and of the various factors, which will call for more or less pronounced deviation from a stereotyped treatment. He hopes this edition will soon be exhausted, and that its successor will contain such an addition. Then, in his opinion, the book will prove of very real assistance to the practicing physician.

J. T. HALSEY.

Manual of Vital Functional Testing Methods and their Interpretation, by Wilfred M. Barton, M. D., Boston; Richard G. Badger, Toronto; the Copp, Clark Co. Ltd.

Dr. Barton has placed us under a debt of gratitude, and has accomplished a task worth doing in assembling in one small volume practically all the methods of testing vital functions, which otherwise are available only as they have appeared widely scattered throughout the literature. This portion of the work appears to have been done thoroughly and well. While his own or quoted interpretations of the significance or value of the results obtained are good and well chosen, the reviewer would have liked the book better and believes it would have been of more value, had this portion of the text been very considerably expanded. The reader, already familiar with these tests and the literature bearing on them, may find these comments sufficient, but one less well informed will be often left in doubt as to what he is to conclude from the too often too brief interpretations.

J. T. H.

Medical Practice Based on the Principles and Therapeutic Applications of the Physical Modes and Methods of Treatment, by Otto Juetter, A. M., Sc. M., Ph. D., M. D. Al L. Chatterton Co., New York.

This book has decidedly disappointed the reviewer, for its title had led him to hope that it would be one of which he could approve, and which he could heartily commend. Perhaps one or two quotations will show why he cannot do so. "Appendicitis is only exceptionally a surgical disease * * * The many tales that are told about the appendix sloughing or filled with pus, are too manifestly absurd and sensational to merit any serious attention." Under the treatment of syphilis we read, "The patient is put on dry carbo-hydrate diet, consisting principally of stale bread, rice and some fresh fruit. Every other day a glass of cider is allowed." "The effects of this dry diet is a veritable revolution in the metabolic function of the organism." (In my patients it would cause not a revolution, but a rebellion.) "The external evidences of syphilis are in no way interfered with." After further details of "eliminative treatment" have been given, there follows—"it is a most severe ordeal for the patient while its rationale and its results are unquestioned." With the first portion of this last citation the reviewer agrees.

We believe that any author capable of making such statements as are quoted above is not the Moses we have been looking for to lead us out of the wilderness of inefficient therapy.

J. T. H.

A Text-Book of Chemistry and Chemical Uranalysis for Nurses, by Harold L. Amoss, S. B., S. M., M. D., Dr. P. H. Lea & Fibiger, Philadelphia and New York, 1915.

We would conclude from our knowledge of nurses, not only here, but in some Northern and Eastern communities, that much of the chemistry contained in this book strikes well over their heads. Further, we might add that for the present, at least, it is hardly possible for the average nurse to profit by the manner in which the subject matter is treated. To be specific, we might mention, for example, the treatment of amino-acids on page 204, and Diazoniam Compounds on page 211. We do know that the educational foundation of the large percentage of women entering upon the nurse's calling will not permit them to grasp the subject as here presented. And, is it really necessary that they should do so? We think their time can be better employed. STORCK.

A Compend of Medical Chemistry, Inorganic and Organic, including Urinary Analysis, by Henry Liffmann, A. M., M. D. Sixth Edition, revise. P. Blakiston's Son & Co., Philadelphia.

The reviewer is among those who think that an adequate compend of medical chemistry is a valuable supplemental aid to the student's note book. Leffmann's treatise is such a book. The author has carefully revised this, the sixth edition, which brings information abreast of present-day knowledge. STORCK.

What to Eat, and Why, by G. Carroll Smith, M. D. W. B. Saunders Company, Philadelphia and London, 1915.

We are struck at once by the practical nature of Dr. Smith's book. The desire of the author is to place before the medical student, and particularly the active, busy practitioner a book describing the fundamental elements of food and the principles underlying its use. The facts brought out are lucidly and concisely presented. A long experience and careful practice has taught Dr. Smith the "why" in prescribing a diet. How much protein to give, and the proportion of fat and carbohydrates necessary are the chief questions to be considered in arranging a proper diet for a patient, and Dr. Smith has successfully endeavored to make this plain. If the profession would devote more time to proper dietetic studies than is done at the present, remembering at all times that the practice of medicine is something more than the mere act of drug-giving, we shall have made a great advance in placing medicine on a rapidly ascending plane.

STORCK.

The Aftermath of Battle, With the Red Cross in France, by Edward D. Toland, with a preface by Owen Wister. The McMillorn Co., New York, 1916.

This is an unvarnished tale, taken from the diary of a volunteer American worker in the Red Cross, engaged in relieving some of the suffering caused by the most colossal war in all history. Like most narratives that deal with stirring scenes, it needs no embellishment to make it thrilling, for the simple recital of a great event is an effective way of bringing to the hearts and minds of the readers a faithful picture of the events portrayed. In the present war, from which we are happily delivered, acts of heroism are so common that they cease to excite comment. The Red Cross is doing noble work at the very fringe of the battlefield and in hospitals, and Mr. Toland's little book carries us to scenes of actual war—aeroplanes, exploding shells, trains loaded with bleeding and dead humanity—and from there to the quiet hospitals where kind hands minister to the sad wreckage of the Great Convulsion. This booklet brings us behind the scenes, and shows us war without the glamor.

A.McSHANE.

Bacteriology for Nurses, by Harry W. Carey, M. D. F. A. Davis Company, Philadelphia and London.

The basis of the book is the lecture notes used by the author in teaching nurses at the Samaritan Hospital Training School. The subject is presented in a simple way, easily understood. A brief discussion of infection and immunity is included. This work will be found very useful for the purpose for which it is intended.

C. C. BASS.

Publications Received

W. B. SAUNDERS COMPANY, Philadelphia and London, 1916.

The Clinics of John B. Murphy, M. D. Mercy Hospital, Chicago, April, 1916.

P. BLAKISTON'S SON & COMPANY. Philadelphia, 1916.

Surgery in War, by Alfred J. Hull, F. R. C. S., with a preface by Sir Alfred Keogh, K. C. B., M. D.

Refraction of the Human Eye and Methods of Estimating the Refraction, by James Thorington, A. M., M. D.

A Manual of Gynecology and Pelvic Surgery, by Roland E. Skeel, A. M., M. S., M. D.

THE YEAR BOOK PUBLISHERS. Chicago, 1916.

The Practical Medicine Series. Volume 1; General Medicine. Edited by Frank Billings, M. D.

LEA & FEBIGER. Philadelphia and New York.

Elementary Bacteriology and Protozoology, by Herbert Fox, M. D. Second edition, revised and enlarged.

WASHINGTON GOVERNMENT PRINTING OFFICE. Washington, D. C., 1916.

Public Health Reports. Volume 31, Numbers 14, 15, 16 and 17.

Report of the Department of Health of the Panama Canal. February, 1916.

The Transmission of Disease by Flies, by Ernest A. Sweet.

MISCELLANEOUS:

First Annual Report of the National Committee for the Prevention of Blindness.. (National Committtee for the Prevention of Blindness, 130 East 22nd St., New York City.)

Proceedings of the Medical Association of the Isthmian Canal Zone. October, 1914, to March, 1915. Vol. VII, Part 2. (Panama Canal Press, Mount Hope, C. Z., 1916).

Quarterly Bulletin of the Louisiana State Board of Health. Vol. VII, New Orleans, March, 1916.

The Institution Quarterly. An Official Organ of the Public Charity Service of Illinois. March 31, 1916.

The Anti-Prohibition Manual (1916). (Published by the Publicity Department of the National Wholesale Liquor Dealers' Association of America, Cincinnati, Ohio).

The Mortality from Cancer Throughout the World, by Frederick L. Hoffmann, LL. D., F. S. S., F. A. S. A. (The Prudential Press, Newark, N. J., 1915).

Motion Study for the Crippled Soldier, by Frank B. Gilbreth. (The American Society of Mechanical Engineers, New York City).

Reprints

Use and Abuse of the Rice Diet, by L. Duncan Bulkley, A. M., M. D.

Conservation of Vision and Prevention of Blindness, by G. E. de Schweinitz, M. D.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans for April, 1916.

Cause.	White	Colored	Total
Typhoid Fever	2	1	3
Intermittent Fever (Malarial Cachexia)	.....	1	1
Smallpox	.....	.....	....
Measles	.....	.....	....
Scarlet Fever	.....	.....	....
Whooping Cough	2	.....	2
Diphtheria and Croup	1	.....	1
Influenza	5	3	8
Cholera Nostras	.....	.....	....
Pyemia and Septicemia	2	.....	2
Tuberculosis	33	46	79
Syphilis	1	4	5
Cancer	21	9	30
Rheumatism and Gout	.....	.....	....
Diabetes	4	1	5
Alcoholism	.....	.....	....
Encephalitis and Meningitis	3	.....	3
Locomotor Ataxia	1	.....	1
Congestion, Hemorrhage and Softening of Brain	12	6	18
Paralysis	4	2	6
Convulsions of Infancy	1	.....	1
Other Diseases of Infancy	7	10	17
Tetanus	.....	1	1
Other Nervous Diseases	5	1	6
Heart Diseases	41	32	73
Bronchitis	1	6	7
Pneumonia and Broncho-Pneumonia	9	21	30
Other Respiratory Diseases	9	.....	9
Ulcer of Stomach	1	2	3
Other Diseases of the Stomach	1	.....	1
Diarrhea, Dysentery and Enteritis	18	12	30
Hernia, Intestinal Obstruction	4	.....	4
Cirrhosis of Liver	8	4	12
Other Diseases of the Liver	5	.....	5
Simple Peritonitis	.....	.....	....
Appendicitis	3	1	4
Bright's Disease	26	14	40
Other Genito-Urinary Diseases	11	5	16
Puerperal Diseases	7	5	12
Senile Debility	.....	.....	....
Suicide	6	.....	6
Injuries	26	17	43
All Other Causes	18	9	27
Total	298	213	511

Still-born Children—White, 18; colored, 24. Total, 42.

Population of City (estimated)—White, 276,000; colored, 102,000. Total, 378,000.

Death Rate per 1000 per Annum for Month—White, 12.96; colored, 25.06; total, 16.22. Non-residents excluded, 13.94.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure 30.02
Mean temperature ..... 68.
Total precipitation ..... 2.55 inches
Prevailing direction of wind, south.

Vol. 68 JULY 1915 No. 1

Paullum sepultæ distat inertiæ Celata Virtus.

New Orleans Medical AND Surgical Journal

ESTABLISHED 1844

EDITORS;— Chas. Chassaignac, M.D., and Isadore Dyer, M. D.

TULANE UNIVERSITY

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For Bulletins and other information, address

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P. O. Box 770, New Orleans, La.

Vol. 68 AUGUST 1915 No. 2

Paullum sepultæ distat inertiæ Celata Virtus.

New Orleans Medical AND Surgical Journal

ESTABLISHED 1844

EDITORS;— Chas. Chassaignac, M.D., and Isadore Dyer, M. D.

ol. 68 SEPTEMBER, 1915 No. 3

Paullum sepultæ distat inertiæ Celata Virtus.

New Orleans Medical AND Surgical Journal

ESTABLISHED 1844

EDITORS;— Chas. Chassaignac, M.D., and Isadore Dyer, M. D.

Vol. 68 DECEMBER, 1915 No. 6

Paullum sepultæ distat inertiæ Celata Virtus.

New Orleans Medical AND Surgical Journal

ESTABLISHED 1844

EDITORS;— Chas. Chassaignac, M.D., and Isadore Dyer, M. D.

Vol. 68 JANUARY, 1916 No. 7

Paullum sepultæ distat inertiæ Celata Virtus.

New Orleans Medical AND Surgical Journal

ESTABLISHED 1844

EDITORS;— Chas. Chassaignac, M.D., and Isadore Dyer, M. D.

Vol. 68 MAY, 1916 No. 11

Paullum sepultæ distat inertiæ Celata Virtus.

New Orleans Medical AND Surgical Journal

ESTABLISHED 1844

EDITORS;— Chas. Chassaignac, M.D., and Isadore Dyer, M. D.

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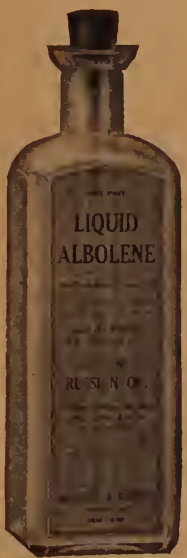
Remains clear at 20 degrees below zero, C. Most other oils will cloud at the Freezing Point.

Freedom from solid paraffin is thus an all important feature of LIQUID ALBOLENE, *the Physiologically-Inert Oil.*



Being homogeneous in composition LIQUID ALBOLENE is therefore superior to oils of a lighter base rendered viscous with solid paraffin.

We were pioneers in presenting Physiologically-Inert Oil to the profession. Insist on your prescriptions being filled with

Liquid Albolene, the Physiologically-Inert Oil.

McKESSON & ROBBINS

ESTABLISHED 1833

NEW YORK

Originators of Refined Physiologically-Inert Oil for Internal Use.

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Paullum sepultæ distat inertiæ Celata Virtus.

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